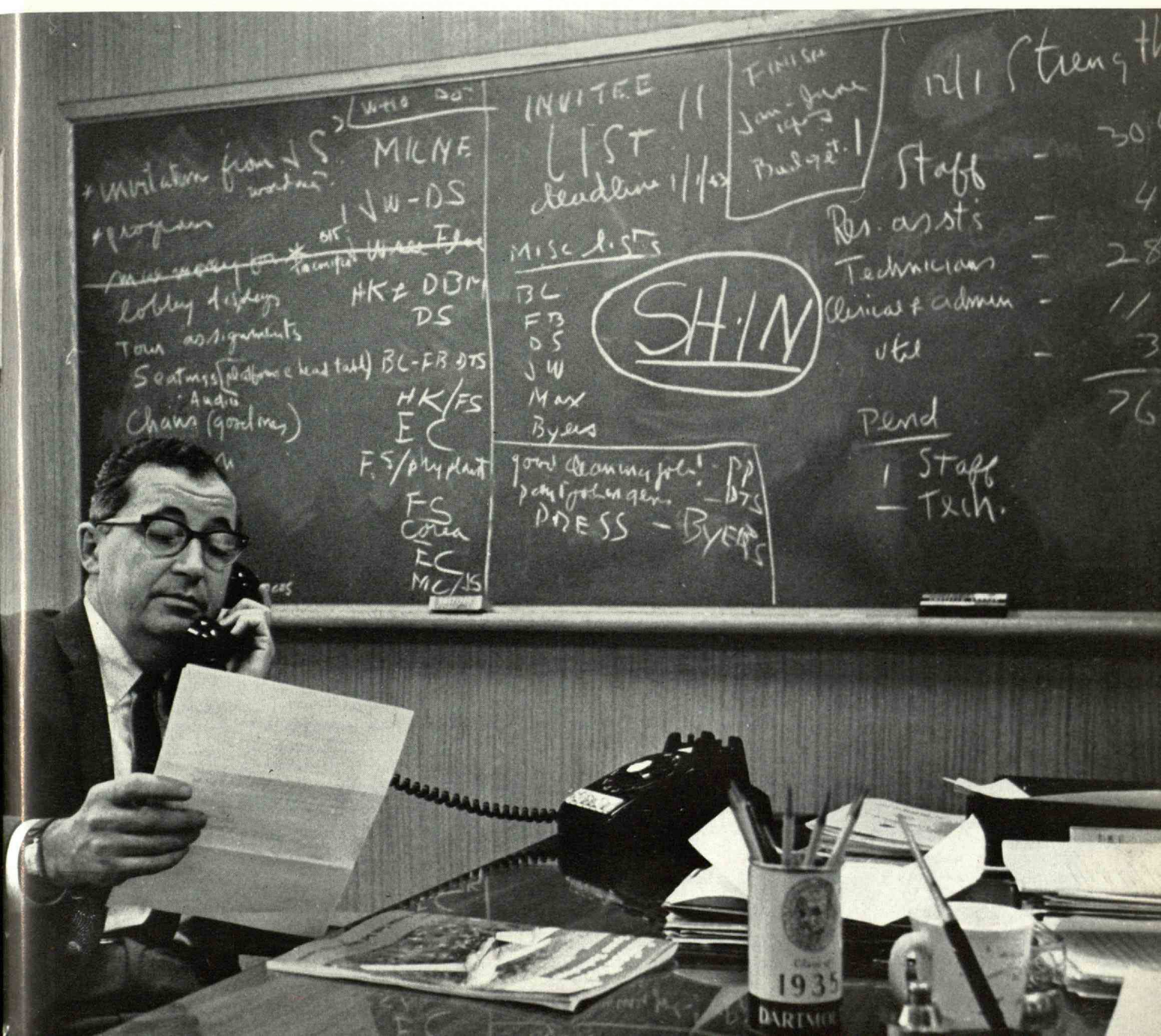


Technology Review

Edited at the Massachusetts Institute of Technology

February, 1963

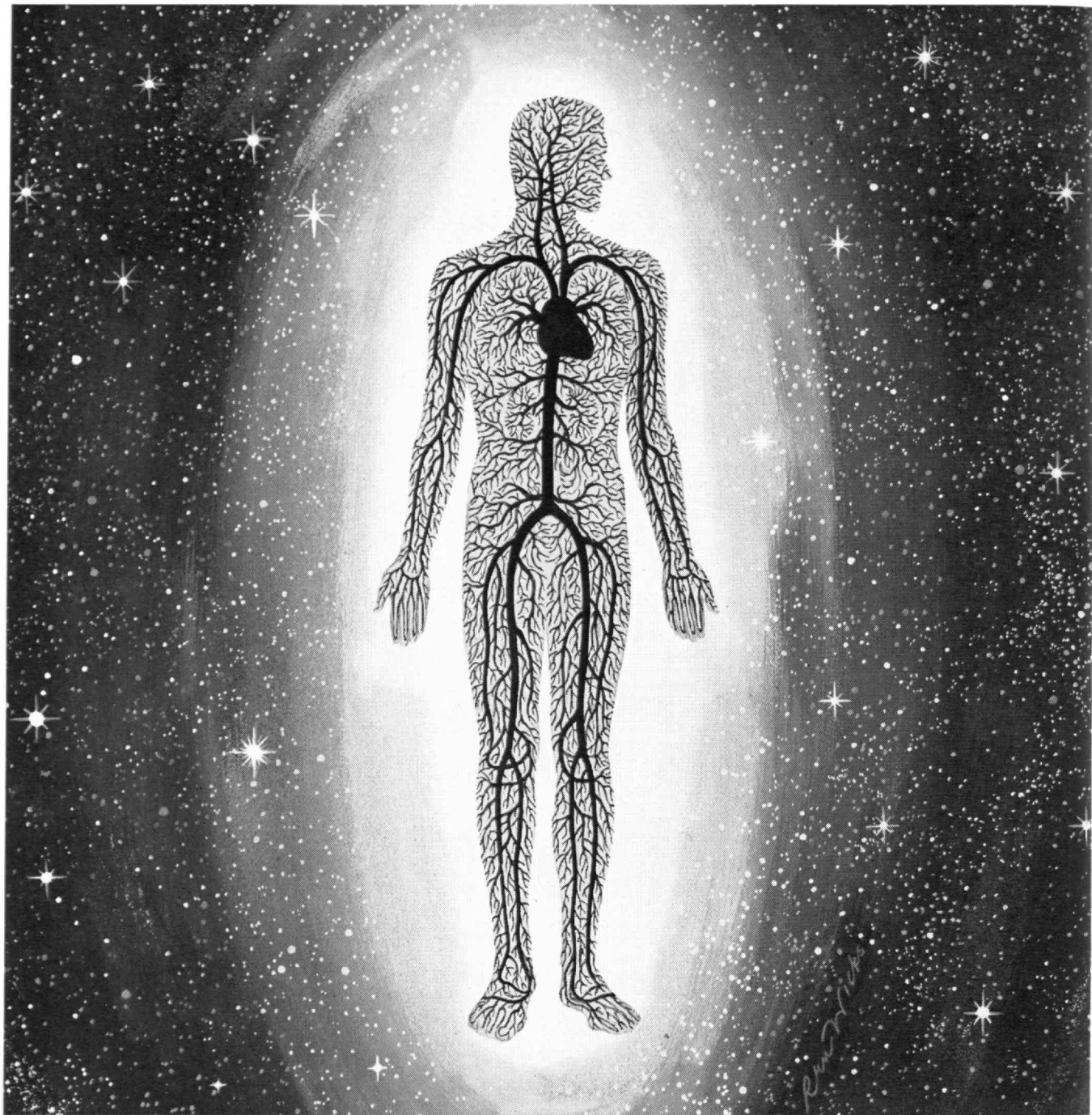
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technology review

Published by MIT

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Life sciences explore the anatomy of space

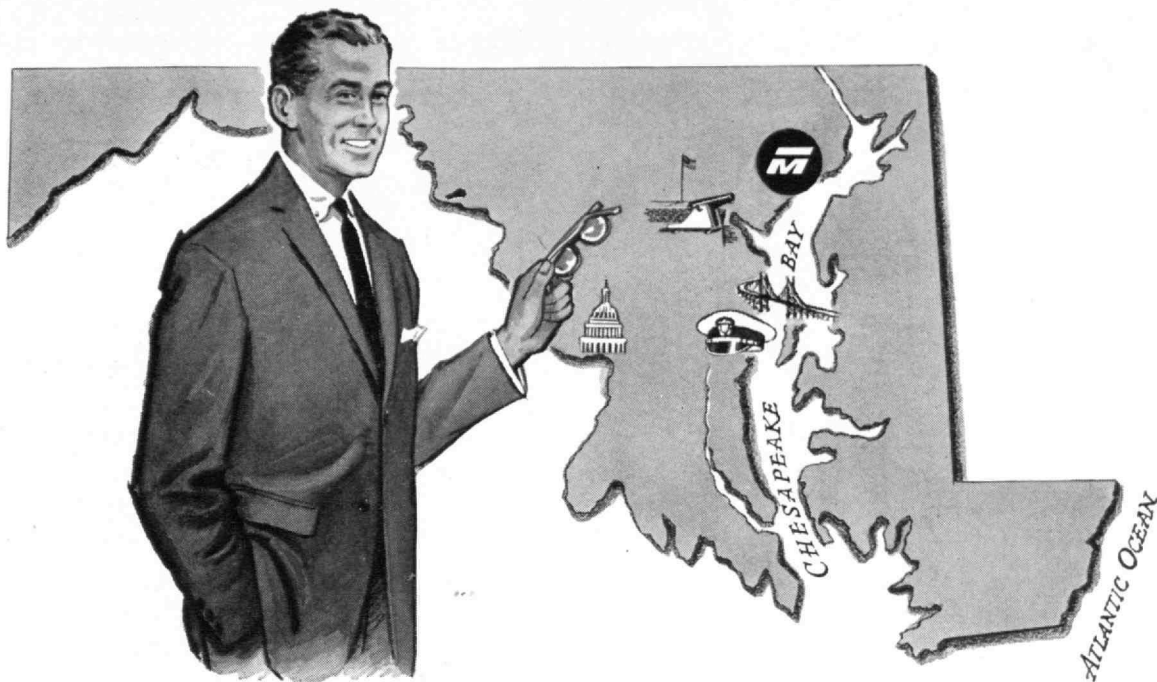
The life sciences group at The Garrett Corporation is concerned with the reaction of living organisms to their environment, and the development of environmental systems to support such organisms. Intensive investigation is now being conducted at Garrett in all major areas of the life sciences—microbiology, neurophysiology, psychology, biochemistry, biophysics and related areas—to study the relationship of man to his environment in extended space travel.

These studies vary in scope from determining the effects of near vacuum conditions on laboratory subjects over long periods of time, to definitively evaluating the effects of re-entry acceleration on human beings.

The only product of this extensive life sciences program is knowledge—knowledge which will support the important contributions continually being made by The Garrett Corporation to this nation's manned spaceflight programs.



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Rocket Propulsion Analysis	Guidance and Navigation
Elevated Temperature	Systems
Structural Analysis	Launch & Control Systems

ELECTRONIC SYSTEMS AND PRODUCTS DIVISION

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Guidance and Navigation	Human Factors
Microwave	Solid State Circuitry
Reconnaissance	Modern Packaging
Command and Control	Data Processing

NUCLEAR DIVISION

Energy Conversion	Radiation Effects
Compact Reactors	Metallurgy
Shielding Analysis	Solid State Physics
Nuclear Rocketry	Radiochemistry
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CURBSIDE BANKER

LESLIE SUTHERLAND, an Assistant Vice President of the New England Merchants Bank, is probably the only banker in these parts who operates an honest-to-goodness motor bank. As head of our new Brighton Suburban Motor Office at 30 Birmingham Parkway, he speeds upwards of 400 car-borne customers on their way in record time each day (current average: 48 seconds).

BESIDES BOSSING this new kind of curbside bank, whose three drive-in windows prompt many customers to ask "What's the toll?", Les Sutherland is a man on wheels himself. He spends many hours each week in calling on his commercial-banking customers. For Les is a "company banker", too—a man who brings financial aid and counsel to many firms all over Greater Boston.

THIS DUAL ROLE sits well on Leslie Sutherland, another of the active, progressive young men who keep the New England Merchants on the move. If you have an idea that your firm could use the services of a company banker like this . . . or if you just want to bank in a hurry any time from 8 a.m. to 6 p.m. . . . stop in soon and meet our "curbside banker" at the Brighton Suburban Motor Office of the New England Merchants National Bank.



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Notes in Memory of H. E. Lobdell, '17

From WILLIAM L. TAGGART, '27, President of the M.I.T. Alumni Association:

We are all saddened by the death of a most dedicated Alumnus and warm friend, Harold E. Lobdell. Our deepest sympathy goes to his widow.

Those of us who have known Lobby since undergraduate days and have worked with him over the years will cherish the memory of this relationship. We are particularly grieved that his long-planned retirement in his adopted and beloved Mexico was so shortened.

From JULIUS A. STRATTON, '23, President of M.I.T.:

Lobby's death is a great loss to us all. He had given his whole life to M.I.T., and the Institute—and particularly the Association—were far richer for his devotion. No one was more widely known and well beloved by the Alumni, and his death will be mourned by M.I.T. men everywhere.

From JAMES R. KILLIAN, JR., '26, Chairman of the M.I.T. Corporation:

My word is a personal one. He gave me my first job. He was best man at my wedding. He was thoughtful and generous to my wife and me as we

started our life together, and in time of trouble he was kind and perceptive in his help.

In good seasons he enlivened friendship with an acerb banter and brusqueness that had a style and pungency patently his own. He could be a superb companion, making a good dinner or a festive evening a memorable occasion.

These good things that marked his life and enriched ours give a host of us reasons to rejoice in having had him as a friend and reasons to feel his loss more deeply.

From JOHN A. LUNN, President of the Class of 1917:

The Class of 1917 and the Institute mourn the passing of an illustrious classmate and a distinguished member of the Institute family—Harold E. Lobdell. Lobby made deep and abiding contributions to the Administration, the Faculty, the Scholarship Programs, the Alumni Association, and The Technology Review. Few if any have left such a significant mark on Institute history and progress.

There will be many eulogies to his memory, but we welcome this first opportunity to bear witness to the legion of qualities which made him great.

TECHNOLOGY REVIEW is published monthly from November to July inclusive, on the 27th day of the month preceding the date of issue, by the Alumni Association of the Massachusetts Institute of Technology. All correspondence regarding its editorial contents, subscriptions, advertising, and changes of address should be addressed to: Room 1-281, M.I.T., Cambridge 39, Mass.

The Review's publisher and editor is *Volta Torrey*; business manager, *R. T. Jope*, '28; assistant to the editor, *Ruth King*; and class news editor, *Roberta A. Clark*. Editorial consultants are *J. J. Rowlands*, *Francis E. Wylie*, and *John I. Mattill*. Members of its staff are *Madeline R. McCormick*, *Patricia Fletcher*, and *Maxine Kenny*.

Officers of the Alumni Association of M.I.T. are: *William L. Taggart, Jr.*, '27, President; *Donald P. Severance*, '38, Executive Vice-

president; *Carroll L. Wilson*, '32, and *F. Leroy Foster*, '25 Vice-presidents; and *Fredrick G. Lehmann*, '51, Secretary.

An annual subscription to Technology Review is \$4 in the U.S., \$4.50 in Canada and elsewhere, and a single copy, 60 cents. Three weeks must be allowed to effect a change of address, for which both the old and the new address of the subscriber should be given.

Contents are copyrighted, 1963, by the Alumni Association of M.I.T. Requests to reprint material from The Review should be addressed to the editor, Room 1-281, M.I.T.

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February, 1963

The dedication of the National Magnet Laboratory was being planned on James M. West's blackboard the day the cover picture and many others—on pages 19 through 24—were taken. The initials on the board are those of people involved; "Shin" is the name of a physicist working at the laboratory, and the staff's size on December 1 is shown at the right.

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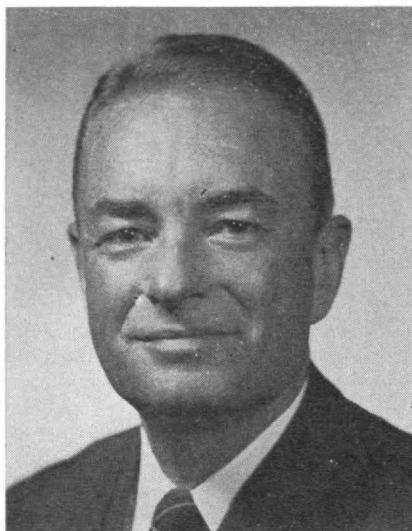
Individuals Noteworthy

Life Member

GILBERT M. RODDY, '31, of Concord, Mass., has been elected as a life member of the M.I.T. Corporation. He has been an alumni term member since 1958, and was president of the M.I.T. Alumni Association in 1957-1958. Currently he is chairman of that Association's National Nominating Committee and of the Corporation Auditing and Medical Department Committees. Mr. Roddy received both his S.B. and S.M. degrees from M.I.T.

He is president of the Boston Manufacturers Mutual Insurance Company and the Mutual Boiler and Machinery Insurance Company, with which he has been associated since 1934. He is a director of the New England Merchants National Bank, American Mutual Reinsurance Company, Affiliated FM Insurance Company, and the Sanborn Company.

Mr. Roddy is a trustee of the Boston Museum of Science and was formerly a trustee of Wheaton College and president of Emerson Hospital in Concord. He is a member of the Longwood Cricket Club and the Union Club of Boston.



Gilbert M. Roddy, '31

Friedman Memorial

THE O-F Foundation of New York has given M.I.T. \$100,000 to establish a lectureship in physics in memory of Professor Francis L. Friedman, '49, who died last summer after devoting himself for several years to efforts to improve physics teaching. The income from the gift will be used to bring distinguished physicists to the Institute for varying periods.



FOUR ASTRONAUTS—from left, Alan Shepard, Deke Slayton, John Glenn, and Scott Carpenter—faced the lensmen on Memorial Drive while at M.I.T. last December for conferences on Project Apollo's guidance system.

The President's Trip

PRESIDENT Julius A. Stratton, '23, of M.I.T. and Mrs. Stratton left last January 5 for a five-week trip to Africa and India.

In Africa they expected to visit Nigeria and Kenya and meet some of the 17 M.I.T. Fellows working for government and developmental corporations in a program supported by the Ford Foundation.

Dr. Stratton, a trustee of that foundation, also was to meet with participants and consultants in its activities in India. His itinerary included a visit to the new Indian Institute of Technology at Kanpur, which M.I.T. and eight other American universities are helping to develop, and institutions in Bombay, Calcutta, and Nepal. He will lecture at the University of Delhi on February 5, and be back in Cambridge February 12.

C. H. Porter: 1879-1962

A PROFESSOR EMERITUS of Accounting in the School of Industrial Management at M.I.T., Charles Huntington Porter, '02, died last December 30 at Tryon, N. C.

Born in Providence and educated at Brown University and M.I.T., he was an assistant and instructor in the Department of Electrical Engineering from 1904 to 1909. He then worked in financial offices of corporations in the Boston area for 20 years, and returned to the Institute in 1927 after serving as comptroller of the Cambridge Gas Light Company. He was professor of accounting from 1930 until he retired in 1945, and then continued as lecturer in the Department of Business and Engineering Administration until June, 1949. He was co-author of *Basic Accounting Principles*, and wrote many articles on taxation and accounting.

Professor Porter is survived by his wife; two daughters, a son, and eight grandchildren.

Honored Geologist

JOSEPH L. GILLSON, '21, retired geologist for the E. I. du Pont de Nemours & Co., and now a visiting lecturer at M.I.T., this month will receive the Hal Williams Hardinge Award of the American Institute of Mining, Metallurgical, and Petroleum Engineers.

(Continued on page 6)



To catch an atom...

Did you know that only one in every 140 uranium atoms found in nature can be split to produce usable nuclear energy? It takes fantastically intricate equipment to capture these elusive atoms. The people of Union Carbide are doing it in a plant at Oak Ridge, Tennessee, large enough to hold 35 football fields.

► Many people thought the uranium separation process too complex to work. For example, pumps had to be developed, that run faster than the speed of sound . . . filters made with holes only two-millionths of an inch across. Union Carbide scientists and engineers not only helped design such a plant and made it work, 20 years ago, but they have been operating it ever since. Union Carbide also operates other vital nuclear energy installations for the U.S. Atomic Energy Commission. One is Oak Ridge National Laboratory, the largest nuclear research center in the country. ► To handle such big research and production jobs requires big, experienced industrial companies. It is only because of their extensive resources and skills that it is possible to take the giant steps needed to bring laboratory developments to full-scale production quickly and successfully.

A HAND IN THINGS TO COME

WRITE for the booklet, "Union Carbide's Twenty Years in Nuclear Energy."

January 18, 1963, marked the 20th anniversary of the Corporation's work at Oak Ridge.

Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y. In Canada, Union Carbide Canada Limited, Toronto.

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Individuals Noteworthy

(Continued from page 4)

IRE Fellows

LISTED among recently named Fellows of the Institute of Radio Engineers were: *Harold L. Hazen*, '24, for contribution in the field of servomechanism theory and in education; *Joseph T. Cimorelli*, '32, for contributions to the development of electron tubes; *Richard B. Nelson*, '38, for contributions to high-power wideband klystrons; *Ralph E. Meagher*, '39, for contributions to the development of high-speed computers; *John A. Hornbeck*, '44, for contributions to electron devices; *Edward E. David, Jr.*, '47, for contributions to the understanding and exploitation of speech and hearing in communication; *Robert H. Kingston*, '47, for contributions to solid state devices, particularly the solid state maser; *Robert H. Rediker*, '47, for contributions to semiconductor device research; *William N. Papian*, '48, for leadership in the development of magnetic core memory and digital computers; *Paul D. Coleman*, '51, for contributions in the field of submillimeter wave generation; *David A. Huffman*, '53, for contributions to switching theory and information theory; and *John V. Harrington*, '58, for contributions to radar detection.

(Continued on page 34)

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NEW BOOKS

from the M.I.T. Press

THE VIEW FROM THE ROAD

By Donald Appleyard, Kevin Lynch and John R. Myer. For planners and all those interested in the esthetics of highway design, this book examines both existing and proposed highways, develops an ideal expressway system, and analyzes the looking habits of American drivers. With examples of road design from New York City, Philadelphia, Los Angeles, Hartford and Boston, and a suggested system of notation for highway planners. 64 pp. Paper, about \$5.50

ICE AND SNOW: Properties, Processes, and Applications

Edited by W. D. Kingery. In these 46 papers presented at the International Conference on Glaciology, at M.I.T. in 1962, scientists from many fields and many nations examine the properties and technical uses of natural ice and snow. Chemists, ceramicists, metallurgists, physicists, and geologists join glaciologists in building a body of knowledge that will enable the more extensive and effective utilization of these widely available materials whose engineering potentialities remain generally unexplored. 736 pp. illus. \$16.00

ALBANIA AND THE SINO-SOVIET RIFT

By William E. Griffith. The first full-scale and documented treatment of Albania's break with the Soviet Union and alliance with Communist China, introducing material previously unpublished. After a brief summary of Balkan history, with particular emphasis on Albania's relations with Yugoslavia, the author presents a detailed study of the course of relations between Moscow, Peking, and Tirana from 1960 to 1963. Approx. 416 pp. \$7.50. Paper, \$2.95

THE COMMUNIST FOREIGN TRADE SYSTEM

By Frederick L. Pryor. While researching this book in East Germany in 1961, the author was arrested and held in solitary confinement until exchanged, with Francis Powers, for Colonel Abel. Dr. Pryor is uniquely qualified to contribute significantly to a subject previously treated only piecemeal in scattered journal articles. In order to make more meaningful to the West the trade statistics and the rapid changes in trade policies of the satellite countries, the author describes and analyzes the process of planning and decision-making in the agencies controlling the foreign trade of the Communist-bloc countries. Approx. 320 pp. \$7.50

Cambridge 39, Massachusetts

FEBRUARY, 1963

Recently Published

STRATEGY AND STRUCTURE

by Alfred D. Chandler, Jr.

How the 70 largest corporations in America have handled the administration of an expanding business. "No other book I know of brings the specialty of business history so much into the stream of economic and general history. Tightly written, closely reasoned. . . it will unsettle many cherished stereotypes."—*American Historical Review*. 463 pp. Charts. \$12.50

THE UNIVERSE

by Otto Struve

Modern astronomical riddles are understandably explained in this fascinating book by one of the world's most distinguished astronomers. Our knowledge of the solar system, stellar evolution, galaxies, radio astronomy, and the relation of Man to the Universe are brought up to date in this collection of the author's six Karl Taylor Compton lectures. "Clear, lively, and interspersed with personal anecdotes and reminiscences."—*Science*. 159 pp. 82 figures. \$5.75

EXPERIENCING ARCHITECTURE

by Steen Eiler Rasmussen

"A book of great charm and broad understanding. The author starts his readers off on the right track by awakening their visual senses, then proceeds to organize his material by forces. . . solids vs. cavities, planes, proportion, rhythm, texture, light, color and sound."—*Architectural Forum*. "Lucid and clear. The expert will appreciate the precise formulations." *Journal of Aesthetics and Art Criticism*. 245 pp., illus. \$7.95



INVESTOR

Yesterday this school teacher bought several shares of GM stock, joining a family of more than a million shareholders. Like most GM shareholders she is not a large investor. Almost seventy-five percent hold 100 shares or less and over eighty-five percent own 200 or less. More than half of all individual owners of GM stock are women.

General Motors shareholders have more than an investment in manufacturing plants, technical facilities and research centers. In a larger sense, they have made an investment in *people*—more than six hundred thousand of them—their training and talent, their effort and imagination. For *people* are the vital ingredient of General Motors—*people* who build and sell GM products of today; *people* who are planning GM products of tomorrow.

GENERAL MOTORS IS PEOPLE ...MAKING BETTER THINGS FOR YOU

H. E. Lobdell: 1896-1963

He served M.I.T. for 42 years . . . as dean of students, as an executive of its Alumni Association, and as The Review's publisher

SIX MONTHS after retiring from the executive vice-presidency of the M.I.T. Alumni Association, Harold E. Lobdell, '17, died in Houston, Texas. He had looked forward for many years to living in Mexico, but soon after his arrival there last summer a lung ailment sent him to a hospital. He was taken to Houston for further treatment in the fall, and died there on January 1, 1963.

In notifying the M.I.T. Faculty of his death, President Julius A. Stratton, '23, observed that Mr. Lobdell had been a friend to generations of students and had played "an intimate part in the development of the Institute's character and scope." Thousands of Alumni called him "Lobby," and there is no important city in the free world where he did not have friends.

Mr. Lobdell was born in Watervliet, N.Y., on September 4, 1896. His father was famous in New York State as a trainer of harness horses, and his forebears included Abraham Pierson, Yale University's first rector (a post then corresponding to the presidency). He entered M.I.T. as a freshman in 1914, and until his retirement had left it only to train at Plattsburg and serve as a lieutenant in the infantry during the first World War.

For 42 years, after his return from that war, he furthered the well-being of the Institute in numerous impressive ways. He was at first Assistant to the Director of the Division of Industrial Co-operation and Research. In 1922 he became Assistant Dean of Students, in 1929 Dean of Undergraduate Students, and in 1930 Dean of Students. He continued in that office until he became the first Executive Vice-president of the Alumni Association in 1947.

For 40 of those years, Mr. Lobdell also was responsible for *The Technology Review*. As its editor from 1922 to 1930 and publisher from 1930 to 1962, he drew distinguished men to its staff, and made it one of the country's most often quoted alumni magazines. He frequently wrote for it about transportation developments and the Institute's history and policies, and took especial interest in its "Individuals Noteworthy" and "Institute Yesteryears" columns. (Items which he prepared before his retirement will continue to appear in the Yesteryears column for many more years.) With Donald P.

Severance, '38, who succeeded him in the Alumni office, he also edited two editions of the *Alumni Register*.

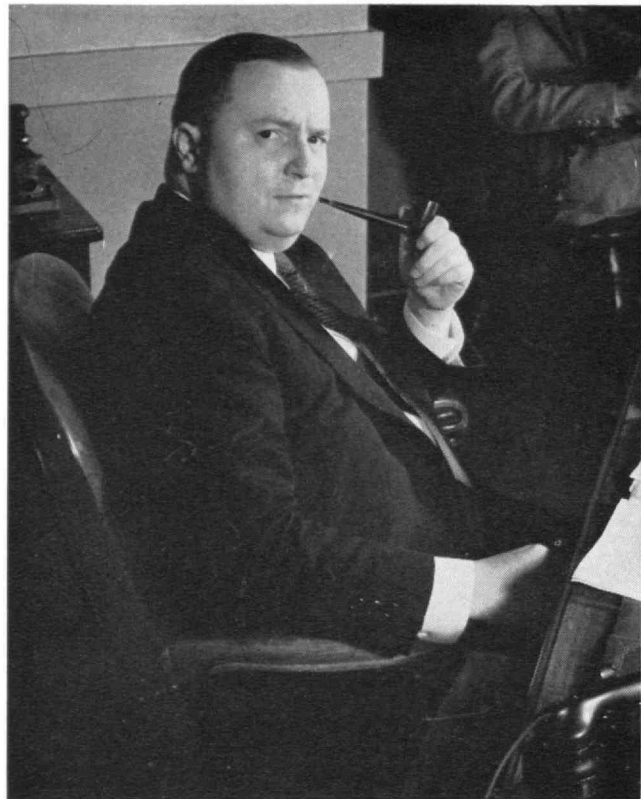
He was one of the founders of both the Institute's present athletic program and its Student Loan Fund. He was that fund's chairman for 25 years, during which 4,200 students received loans totaling \$3,400,000, and policies were established that since have been adopted at many other schools. Mr. Lobdell also traveled extensively, often to visit M.I.T. clubs and attend regional alumni meetings, and his wit, judgment, and extensive knowledge of the M.I.T. community made him an esteemed adviser of all its leaders.

He was president of the National Association of Deans and Advisers of Men in 1933-1934, and also served both Pi Delta Epsilon and Phi Kappa Sigma as a national officer. Among philatelists he was widely known as co-author of *Hong Kong and the Treaty Ports* (a study of early postal stations), and he was a fellow of the Postal Historians (London) and the Royal Philatelic Society. His clubs included the St. Botolph and the Engineers in Boston; the Century, Collectors, and University in New York; and the Army and Navy Club in Washington. He was a Fellow of the American Geographical Society and an associate of the U.S. Naval Institute.

Mr. Lobdell was married to Conchita Zambrano de la Garza in 1954, and their guests at 100 Memorial Drive in Cambridge frequently included visitors and students from Latin America. Mr. and Mrs. Lobdell were honored at many events as he approached retirement last spring, and they made an extensive auto tour of the western states together before proceeding to Mexico from Cambridge.

Funeral services were held in Houston on January 2. Thomas H. Jenkins, '32, and other Texas Alumni assisted with the arrangements. J. K. Jamieson, '31, arranged for Mrs. Lobdell and a group of Alumni to fly to Monterrey, Mexico, her former home, where another service was held and the burial took place on January 4.

Notes in memory of Mr. Lobdell appear on the Contents Page of this issue of The Review, and there are photographs from the files on the next two pages.

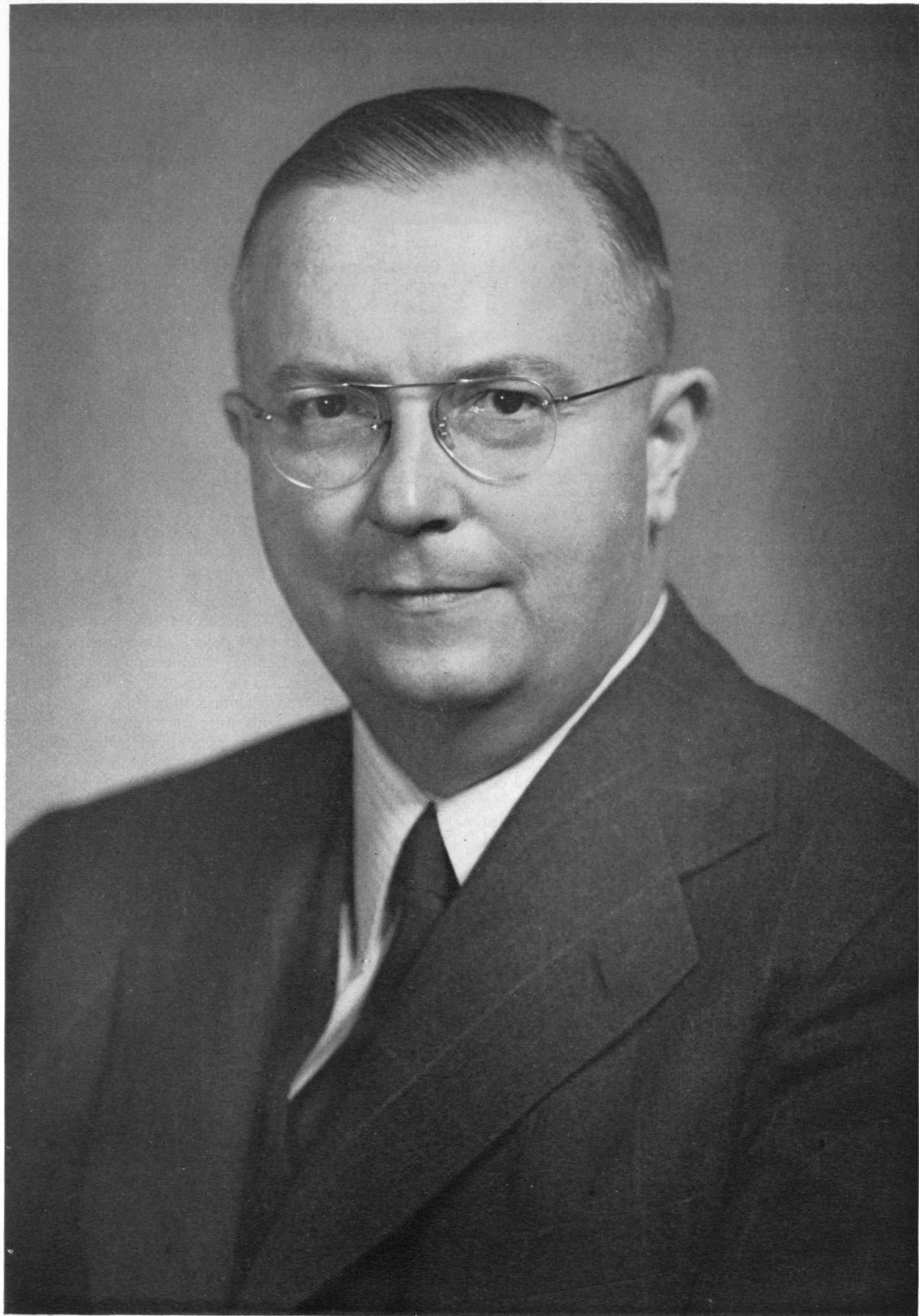


A Leader of M.I.T. Men

H. E. LOBDELL, '17, is seen above as he appeared in 1936 while Dean of Students, and at the right as a marshal in the academic procession during the observance of M.I.T.'s Centennial. The portrait on the next page adorns the M.I.T. Alumni Association offices.

The photo below was taken on a Noche Mexicana in 1955 at the home of Fernando de la Macorra, '23. From the left are Walter J. Beadle, '17, Mrs. Beadle, Mr. Lobdell, Mrs. Lobdell, the beaver, Mrs. E. P. Brooks, Dean Brooks, '17, and Pedro Albin, '47.





Trend Of Affairs



The Center for Space Research

M.I.T. began the year 1963 by announcing plans for a \$4,000,000 Center for Space Research. These plans call for a five-story structure containing 100,000 square feet of laboratory, classroom, and office space. Construction of such a building on Vassar Street, directly behind the Sloan Metals Processing Laboratory, is expected to start this year.

President Julius A. Stratton, '23, said that the National Aeronautics and Space Administration will supply \$3,000,000 under an agreement between NASA Administrator James E. Webb and himself, and M.I.T. will cover the remaining \$1,000,000 of the cost from private gifts and grants to its Second Century Fund.

"Within the last decade a steadily increasing effort at the Institute has gone into space-related fields, and at present Faculty and student interest are growing dramatically," Dr. Stratton said. "This is partly because of the interesting work in space science and engineering which is rapidly emerging for, or is foreseen by, our Faculty, and partly because of recognition of the importance of the objectives of NASA and the contributions toward them which American universities can make. The Institute is now at a point where this new center is crucial to the appropriate development of M.I.T.'s commitment to advanced research and teaching in space-related fields."

Twenty per cent of the M.I.T. Faculty—representing 14 departments and four schools—is now engaged in space-related research and education. More than 500 persons are involved, and of these about 150 are graduate students. Campus space-related research presently supported by NASA amounts to some \$1,500,000 a year and this rate of support for work at M.I.T. is expected to be increased within the next three years by about \$1,000,000 per year.

The space research center will be one of a series which NASA has helped to establish at American universities. M.I.T. already has men at work on buildings for two similar interdisciplinary centers, for earth sciences and for materials science and engineering; and its Second Century Program calls for two more, for communications sciences and for life sciences. Sidewalk superintendents, already surrounded by building spectacles, will have even more to study in a few months.

THE GLEE CLUB pictured above with the brass players of the Concert Band is the oldest of M.I.T.'s six musical organizations, having been formed in 1883. It was scheduled to give seven concerts this year at the Institute and on tour and in combinations with women's choral societies of Smith, Radcliffe, Douglas, and Colby Junior colleges. Its programs included both classical and modern works of considerable magnitude.

The Host Family Program

MANY a foreign student who is notified this spring of his admission to M.I.T. will receive a little later an invitation to spend his first few days in America in a private home. Some of the families volunteering this hospitality will meet their guests at the airport, help them find permanent housing, and become lasting friends.

Last year 85 students were entertained on their arrival from other countries as a result of arrangements made by the M.I.T. Host Family Program with the cooperation of the Foreign Students Office. Mrs. Norman J. Padelford, whose husband is a professor of political science, is chairman of the program and Mrs. Glenn A. Eichenseer, the wife of a member of the Class of 1951, is its vice-chairman. This program grew out of a pilot project by the Protestant Ministry Council, and has worked out so well that Paul M. Chalmers, Adviser to Foreign Students, hopes it will be further expanded this year. It is, he says, a helpful supplement to the customary hospitality of the Technology Matrons.

A young man from Cyprus, who arrived in this country shortly after his father was killed in an auto accident, found it especially helpful to have a friend here. Three students among those invited last year were married after the invitations had gone out and their brides shared the hospitality extended to them. A Thaiander brought his sister, and their hostess found her "a delightful guest."

"It worked out beautifully," in fact, was the general reaction. One hostess reported that her guest was "an immature, insincere, arrogant rich man's son, not doing his country or M.I.T. any good," but such reports were rare. "We are devoted to him," another hostess wrote of her guest. "He has been out every weekend." And another: "Thank you for getting us into this. The children adore him, and I have seen more of M.I.T. than I knew existed."

Surgery with Micro-Anesthesia

JOHN C. CHATO, '60, Assistant Professor of Mechanical Engineering at M.I.T., is developing an exploratory device with which a surgeon can reversibly anesthetize a tiny portion of a person's brain by lowering its temperature. His instrument already has been used successfully at Massachusetts General Hospital in brain surgery to treat Parkinsonism, cerebral palsy, and other conditions, and may also be helpful to doctors concerned with disorders outside the brain.

It consists of two long, concentric, hollow, stainless steel needles. The outer diameter is 2.1 mm., and the tip contains a 5-mm.-long cooling chamber. The refrigerant enters this chamber from the outer needle, and the expanded gas leaves through the inner needle.

The device is used primarily as an exploratory probe. When it is introduced in nerve cells suspected of being responsible for a physiological symptom, those cells are cooled and the conscious patient is examined for persistence of the symptom. If it persists, those cells are proven "not guilty" and another location can be tried. If the symptom disappears, the surgeon knows he has contacted the right nerve and can destroy it.

Highly localized cooling has long been recognized as a potential boon to surgery, but engineering problems have remained unsolved and Professor Chato plans to continue his research with the help of several students. Associate Professor August L. Hesselschwerdt, Jr., '31, and Assistant Professor Raphael Moissis, '57, helped develop this probe, and William Henry constructed it.

Computers for Physicians?

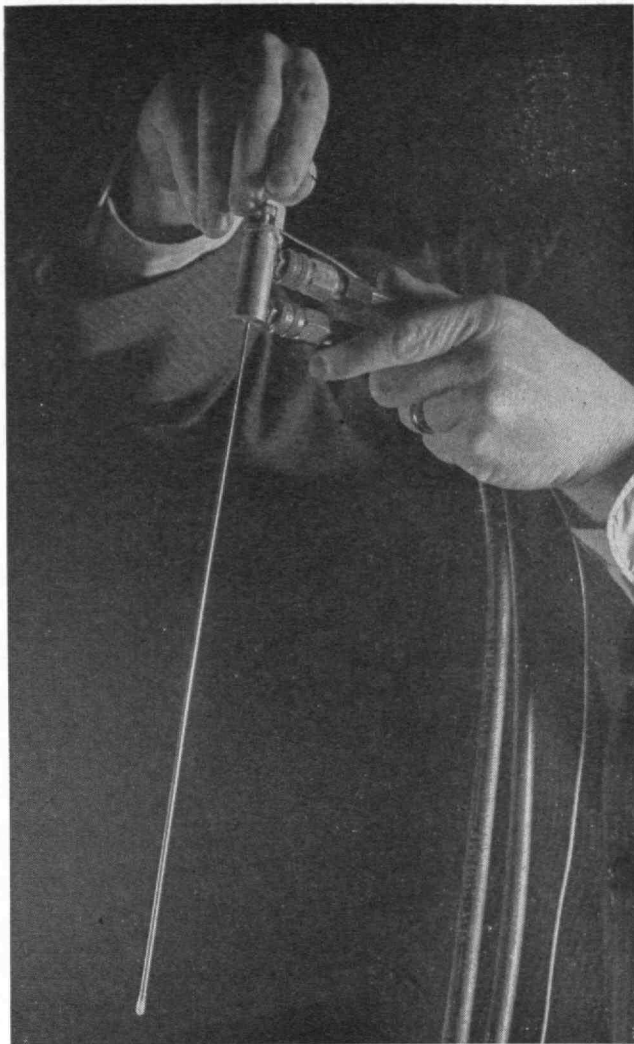
MURRAY EDEN, some of whose work with computers is described on page 15, doubts whether they will be as helpful to physicians diagnosing an individual's illness as in processing data for massive statistical studies.

The problem, he explained at this winter's meeting of the American Association for the Advancement of Science, is one of definition. The physicians' definitions of diseases and symptoms lack the precision that computer logicians need to turn them into standardized mathematical form. If the physicians could come up with such definitions, he added, no computer would be needed because a book of tables or charts would suffice.

Computers can handle large volumes of numbers very fast but actual medical diagnosis does not involve many numbers. In fact, said Professor Eden, the doctor's process of diagnosis is closer to a pattern-recognition operation than to a mathematical operation—and relatively little is known yet about how the brain recognizes patterns.

Unfinished Business with Fish

FOR CENTURIES, men have studied the responses of fish to various stimuli. Yet a fresh finding in this often examined field of knowledge has been gleaned by an M.I.T. student from a tank of goldfish in his room, and was noted in last fall's report of the Research Laboratory of Electronics. The student was Willard L. Rodgers, Jr., '62; his collaborators were John R. Segal, '59, of the Boston Veterans Administration Hospital, and Ronald Melzack, Associate Professor of Psychology—and the data he cited was obtained by counting the number of times that his fish flipped their tails.



A tiny ball of ice formed at the tip of the needle used for micro-anesthesia when it was shown to the photographer.

Rodgers' records indicate that if you move a piece of blue paper over a fish tank each morning before breakfast, the fish will sometimes, but only rarely, flip their tails. If you tap the tank each day, they will respond with tail flips much more often, but the number of such responses will soon decline. Both tapping and waving blue paper, however, are remarkably effective. Even fish which have learned to ignore taps will respond if you greet them some morning with both a tap and a visual hello.

Why? Two large nerves called Mauthner cells extend down the fish's spinal column and make its tail flip when they are activated. These cells seem to react more certainly to changes in water pressure than to visual signals. Yet the latter, the R.L.E. report notes, may so facilitate the Mauthner cells' response to pressure changes that even a fish that has learned to disregard pressure changes will heed them again when they are accompanied by an optical change.

Knowing this certainly doesn't make dealing with a fish any less sporting. Yet it may make speculating about how living things learn, remember, and forget, somewhat more productive—and that is now a favorite pastime of scientists as well as fishermen.*

*If you repeat Rodgers' experiment, do it while the fish are below the surface.

Nuclear Engineering's Growth

M.I.T. NOW has the largest enrollment in nuclear engineering of any U.S. school. It has been relatively stable, at around 120 men, for the last four years, and the Institute has awarded 235 master's and 37 doctor's degrees in nuclear engineering.

Although still out of school only a few years, many of the holders of these degrees already are filling highly responsible positions. One or more is on the staff of each of the National Laboratories, others are teaching at the University of California, Cornell, Case, and elsewhere, and others are serving such manufacturers of equipment as General Electric, Westinghouse, General Dynamics, and Atomics International. Naval officers among them have contributed to the development of nuclear submarines and an Army officer from M.I.T. was in charge of installing the nuclear power plant at Camp Century on the Greenland icecap.

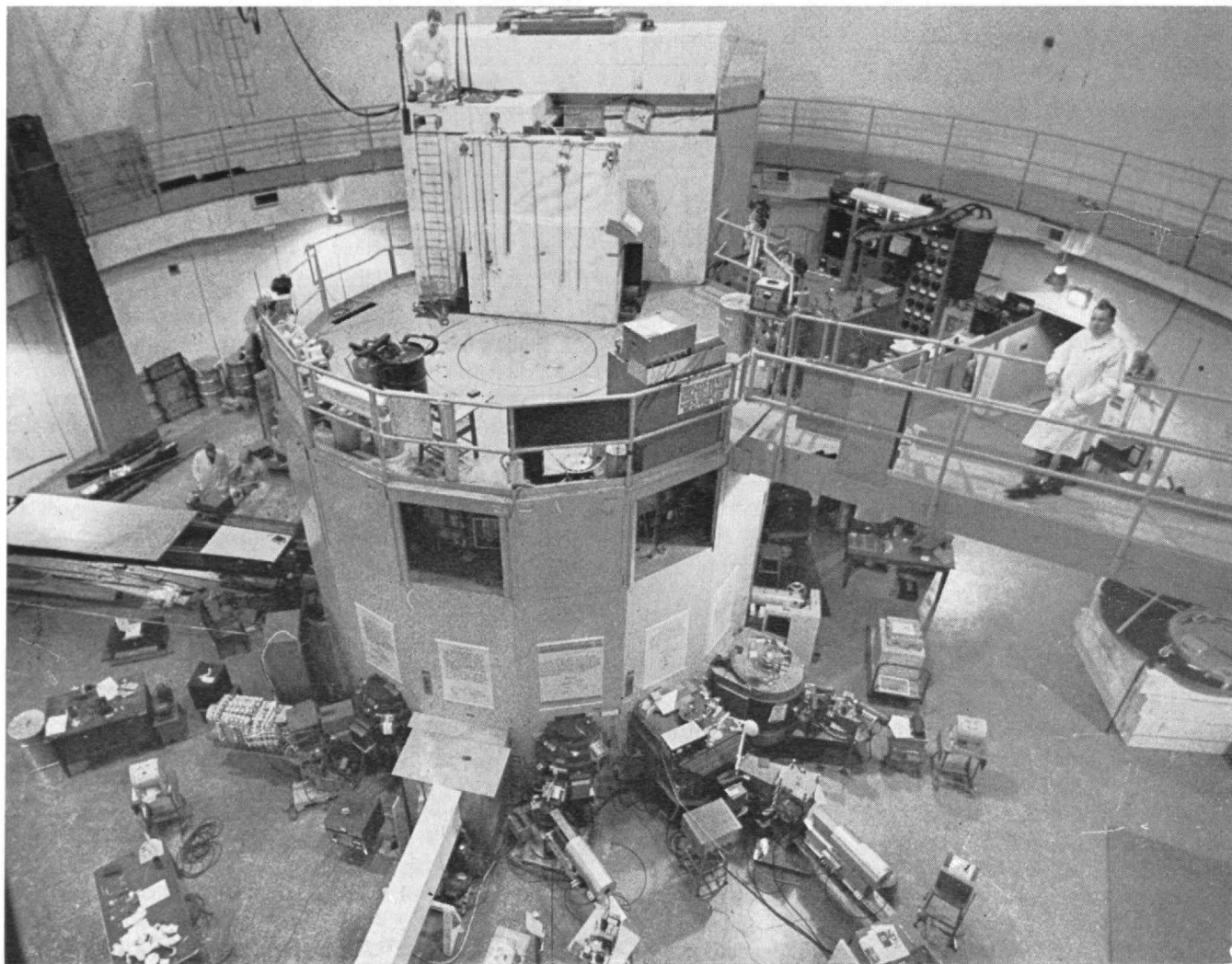
Manson Benedict, '32, who taught the Institute's first class in nuclear engineering 10 years ago, returned from the World Power Conference in Melbourne, Australia, last fall convinced that there will be further large growth in the nuclear power industry all over the world in the next two decades, and a corresponding need for trained nuclear engineers. The five-year-old Department of Nuclear Engineering which he heads now has a Faculty

of 15—noteworthy because of the disciplines represented: Seven of its members are physicists, three are nuclear engineers, two are chemical engineers, one a mechanical engineer, one an electrical engineer, and one a metallurgist. It offers two main curricular options, one in fission technology and the other in thermonuclear developments, both of which provide for instruction in a wide variety of subjects; and students are referred for more standard parts of their education to other M.I.T. departments.

"With this diversified academic fare," Professor Benedict recently reported, "we feel that our students get an education in nuclear engineering second to none. Students evidently agree with us, for we have many more applications for admission from well-qualified students than we have staff to handle or financial aid to support. About one-fifth of all men holding Atomic Energy Commission Graduate Fellowships are at M.I.T., and we have twice as many of these students as the next most popular school."

Addresses Requested

THE Air Science Department at M.I.T. is updating its list of M.I.T. Alumni now serving as officers in the U.S. Air Force, and will be grateful if all those now on active duty with the Air Force write to the Department, giving their class years and present military addresses.



How extensively the nuclear reactor at M.I.T. is being used is suggested by the array of apparatus now set up around it.

Handwriting From a Computer

A machine programmed to form letters from simple elements can commit forgery . . . but it lacks a language in which to write

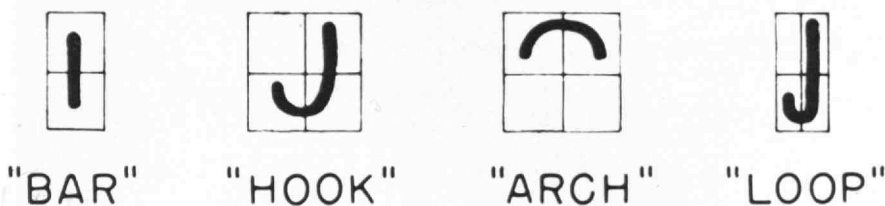
BY SAMUEL JAY KEYSER

SUPPOSE someone should ask you to copy a poem. You could do so easily. But suppose someone should ask you to copy the Mona Lisa. Impossible? Yes, but why? The answer is that a painting, unlike a poem, is a continuous symbol. There is only one representation of it, namely, itself. But a poem, being made up of discrete symbols (called letters) can be represented in any number of ways and still be the same poem.

The same difference separates any discrete representation of a name, say JOHN, and its handwritten counterpart. To reproduce the essence of JOHN one need only get the right letters in the right order. That is, one need know only how to spell. To reproduce the essence of John's signature is something else altogether. No matter how close you may come, there is always room for improvement.

This artful aspect of handwriting has, during the last three years, occupied the attention of Associate Professor Murray Eden of M.I.T.'s Department of Electrical Engineering and Professor Morris Halle of the Department of Modern Languages. And now they have devised a computer program that enables a machine, when exposed to just a small sampling of handwritten words, not only to forge them with remarkable accuracy, but to write like them *ad infinitum*.

Although a machine thus programmed can imitate handwriting and forge a signature, it cannot string handwritten strokes together into English words without help. The program shows the computer how to generate cursive script—it even has its own personal handwriting—but it does not know a language in which to write. To make its writing meaningful, it requires the guidance of its designers and mentors, or one of the students



These are the four primitive elements that are used to produce cursive writing.

working with them, Allan P. Paul, '60, Allen Womack, and Paul Mermelstein, '60. The letter (on page 18) to Professor Jerome Wiesner, the President's science adviser, was written by the TX-O computer at M.I.T., but Eden and Paul told it what to write.

Elements and Rules

The handwriting research at M.I.T. during which this letter was produced was motivated not by a desire to mechanize letter writing or to commit forgery, but in order to devise a theory to account for certain aspects of human behavior.

The first question considered, says Professor Eden, was: "What do people who can produce handwriting know that non-writers do not?" A second question was: "How do literate human beings distinguish between handwriting and, say, printing? Or a child's scribbles on wallpaper? What, in other words, precisely are the distinctive features that set cursive script apart from all other manipulations of a pen on paper?"

Eden and Halle say that handwriting can be defined by four primitive elements and a small set of rules.

The four primitive elements are the fundamental building blocks from which handwriting is constructed, much like wood, stone, mortar, and brick are used in the building of houses. And in the same way that certain steps must be taken to build houses, certain rules must

be applied to the primitive elements to construct handwriting with them.

The four primitive elements of cursive writing are called the *bar*, *hook*, *arch*, and *loop*. They are defined technically as point pairs, partially ordered. This means that each element is a line—not necessarily a straight one—drawn between two points. The points are ordered in a specific way, one above the other, or to the right of the other, or both. The line drawn between the two points must be smooth and continuous and must contain no point of inflection, i.e., it is not allowed to change the sense of rotation, clockwise or counterclockwise.

Four rules allow these four elements to be manipulated in a number of ways:

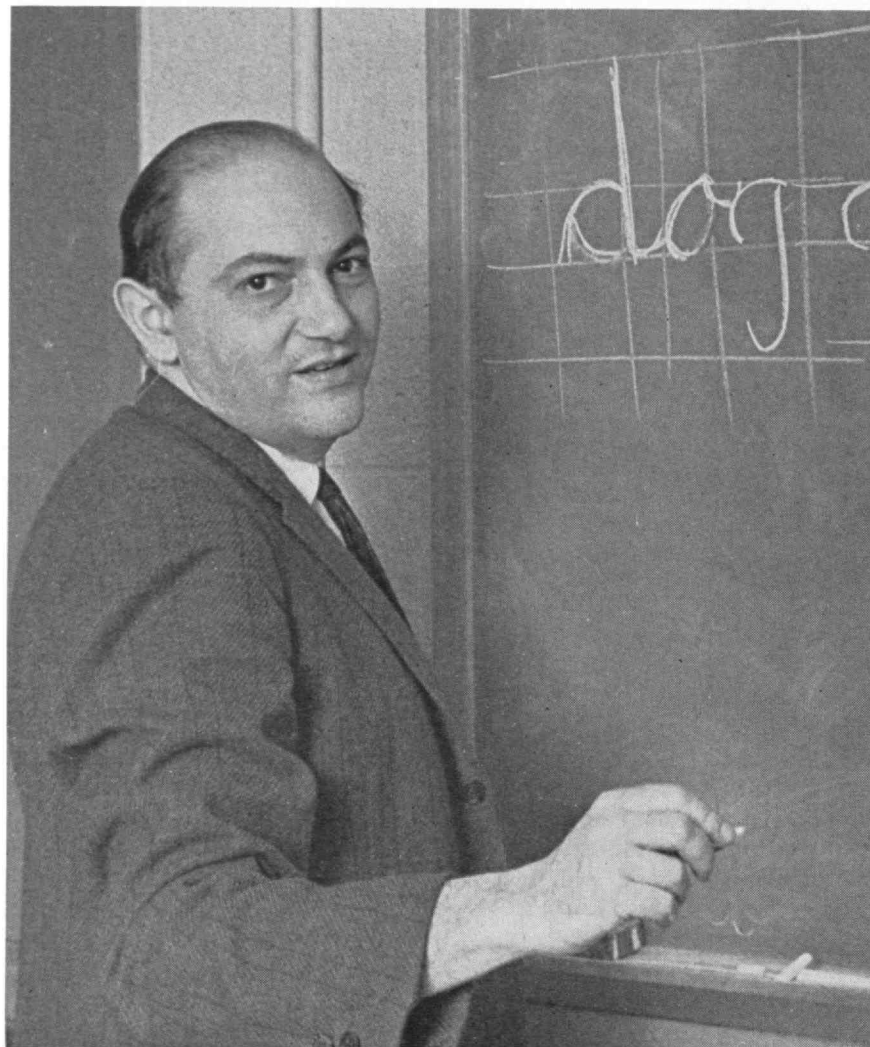
❏ One rule allows the elements to be rotated so that the *bar*, for example, which is straight up and down can become a horizontal line.

❏ Another rule allows the elements to be reflected, turned into their mirror images as it were. A *hook* going from right to left, after the operation of this rule, goes from left to right.

❏ The third rule positions the elements with respect to a median line. It places the elements above, on, or below that line.

❏ The fourth rule concatenates the elements, i.e., it determines which of the two points that make up every primitive element is the starting point and which is the end point.

Every handwritten English letter is really a combination of one or



Halle needs a blackboard to explain how a machine commits forgery.

more of these primitive elements modified by one or more of these rules. With the primitive elements plus the four rules it is possible to designate a sequence of strokes that uniquely defines each letter of the alphabet.

When the sequences of strokes have been produced, two more steps must be taken, however, to turn them into actual handwriting:

In the first step, called "collation," the separate sequences of strokes are collapsed. The letter *g*, for example, is made up of all four elements. The rules give us the proper alterations of these elements and the proper order, namely, *hook*, *arch*, *bar*, and *loop*. But these cannot be left arrayed one next to the other. They must be pushed closer together, or on top of one another, or both, by the collation rules to make this sequence of strokes look like a *g*. The collation rules operate both within letters and between letters.

The second step in the reproduction of handwriting is called "generation." This involves taking the accordioned bundles of strokes, each of which uniquely defines a given letter of the alphabet, and drawing them through time. The generation rules add the steady left-to-right movement that corresponds to the motion of a pen across a page.

An important aspect of the generation rules is that they introduce certain parameters which, within well-defined limits, vary from one writer to another. These parameters

determine, among other things, the height of the strokes, the width of the loops, and the distance between one stroke and another. The four primitive elements and the four stroke rules determine the similarity between all men's handwriting. The distinctive personality of each individual's handwriting is determined by the generation rules which contain the parameters that differ for each writer.

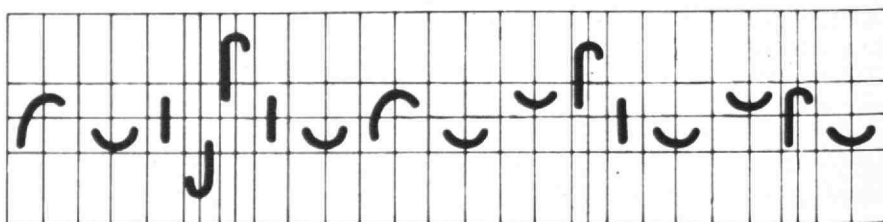
The answer, it now appears, to the question, "What do people who can produce handwriting know that non-writers do not?" is: They know four primitive elements and three kinds of rules: stroke rules, collation rules, and generation rules.

Three Computer Programs

But how do we know this answer is right? To test it Professors Eden and Halle, with Lester D. Earnest, '60, of the Mitre Corporation, and their staff have devised three separate computer programs based upon this conceptualization of handwriting. If the answer is indeed correct, these should enable the computer to match human handwriting behavior. It now does—and to an extremely accurate degree.

The first program tells the computer how to produce across the screen of an oscilloscope handwritten letters corresponding to the printed ones on a typewriter keyboard. The letter to Dr. Wiesner, for example, was typed into the machine and the machine, in turn, wrote it out in longhand. Eden and Paul determined the machine's penmanship on the basis of personal judgment by choosing a standard set of parameters for the generation rules.

The second program deals with the forgery of cursive script. Once the generation rules were adequately formulated, it became possible to match a sample of an individual's handwriting simply by adjusting the parameters of the generation rules.



Properly brought together the elements above become "globe" (see next page).

Once the parameters are fixed, this program enables the machine to write in that person's own characteristic script from then on without the need of further samples.

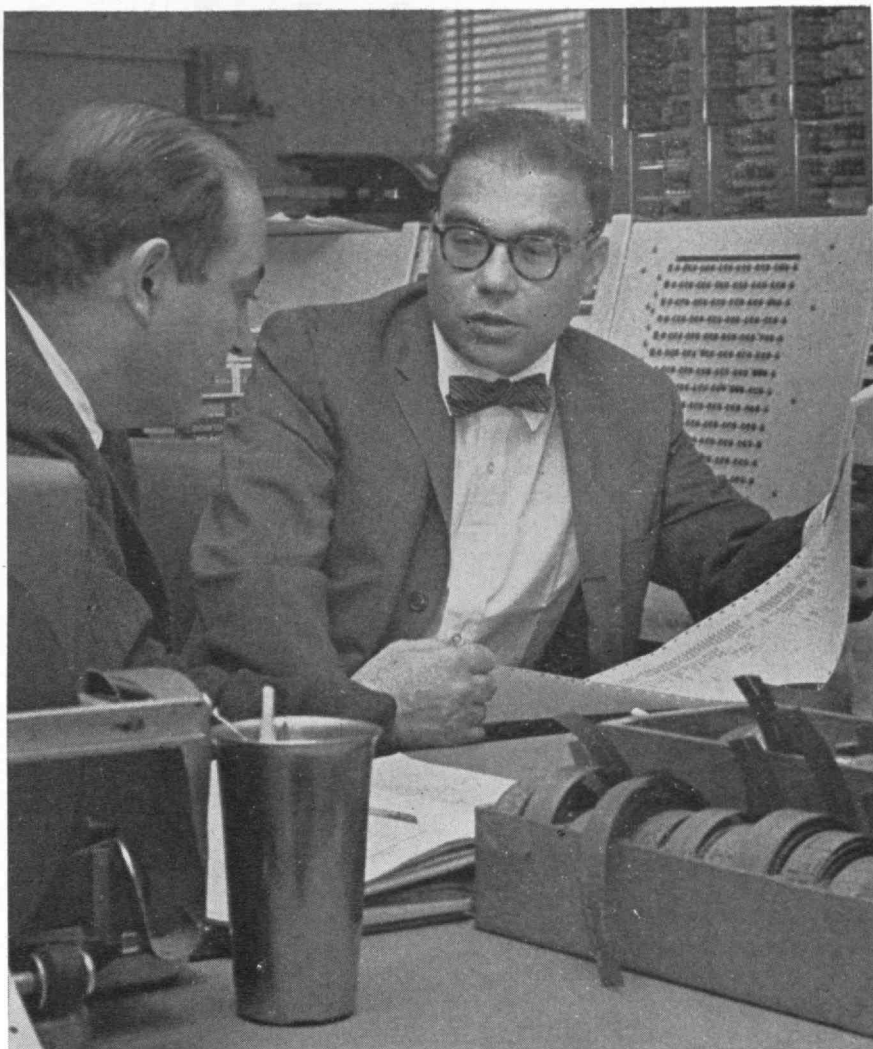
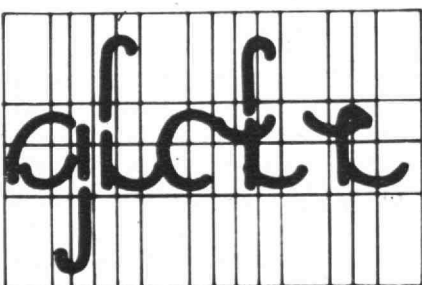
The parameters are matched by eye. A person writes either with a magnetic ball-point pen on paper or with a light pen across the screen of a cathode-ray tube. Then the program imitates the sequence of strokes and repeated trials are made until a good enough matching is obtained.

The resulting match can be so accurate that, given an original word and the machine's forgery, it is practically impossible even for the writer himself to tell them apart. This is true not only of ordinary words but of personal signatures, which are notoriously more idiosyncratic than normal handwriting.

The Recognition Program

The third program devised by Earnest and Eden deals with handwriting recognition. This one, in effect, teaches the machine grammar; albeit a very small part of grammar, consisting simply of a 10,000-word dictionary. In this test of the theory, a handwritten word is stored in the machine and the program is asked to identify the word. It is asked, in other words, to do at least in part what human beings do whenever they read a personal letter or a laundry ticket. But the program does not recognize words in the same way that people do. We consider not only the shape of letters but the sounds they represent and the context in which they occur. The recognition program, rather, scans each handwritten word for certain crude properties.

These properties are, for convenience, referred to by names of "reminiscent" letters. Thus one property that a handwritten word might contain is a closed curve. The program calls this "o" whether it is part of a handwritten *a*, *e*, *b*, *d*, or



Eden (facing camera) works at the console of TX-O in Compton Building.

g. Another property, called "1," is the presence of a long upstroke, and a third, called "i," is a simple downstroke.

If the machine is exposed to the letter *d*, the program does not read a *d*. Rather it reads "o" and "1," i.e., *closed curve* and *long upstroke*, the properties that a script *d* has. From the point of view of the program, there is no such thing as *d*, which, after all, is an abstraction. Knowledge of the language that the program does not have is needed to understand this abstraction. Therefore, if shown a cursive *d* in which the lower loop is not closed, the program will read "i" and "1," i.e., *simple downstroke* and *long upstroke*. But these crude properties describe *cl*, not *d*. This means the program will read a carelessly written sentence as "The *clog* has rabies." No human reader would make such a mistake.

To overcome this difficulty, Earnest recently has experimen-

tally altered the program to consider different choices of properties so that, for example, it will be able to distinguish *cl* from a badly written *d*. In some cases he has reduced the number of possible readings by as much as 85 per cent.

A second and more interesting modification of the program planned for the future involves a procedure known as "analysis by synthesis," in which the program will scan a handwritten input initially for sequences of properties. If a sequence corresponds to more than one English word, the program will write out each of these words. (The properties *closed curve*, *long upstroke*, *closed curve*, *closed curve*, *long downstroke*, for example, describe not only *dog*, but also *bag*. The program will compare the original input word, say *dog*, with each of the words it has written out, say *dog* and *bag*, and it will choose that word which looks most like the original input word.) Once this program

is effectively worked out, the number of multiple readings should be reduced to negligible proportions.

As handwriting degenerates from good to bad, however, the number of possible readings for a given sequence of properties increases. At some point handwriting becomes so bad that no recognition program will work.

A Variety of Benefits

The implications of this unique research are both practical and theoretical. A program that could forge handwriting might be of value in verifying signatures on checks and in settling questions of handwriting identification in court. Another application is in literary scholarship: the matching program could be of inestimable aid to the paleographers who study specific characteristics of handwritten texts from the past to determine whether they were written by the same hand or not. Questions long considered beyond answer now may well be resolved. In this respect, the work is similar in depth to solutions provided by the famous Carbon 14 test.

The possibility of using cursive script to communicate with machines also may greatly simplify man-machine communication, since a machine programmed to recognize handwriting will not require artificial, intermediate languages such as key-punch operations to be told what to do.

Implications for Teachers

Since letters have been shown to be in reality abstract symbols constructed from a finite sequence of strokes, the penmanship taught in schools by stressing duplication of primitive elements and their various transformations (e.g., the Palmer Method) rather than the duplication of letters has been given theoretical support.

The success of the generation program strongly suggests that a fundamental mechanism of human mental activity, in fact, is the transformation by rules of a set of primitive elements. By building the primitive elements and the rules which transform them into M.I.T.'s TX-O computer, Eden and Halle have been able to make that computer replicate, to an amazing degree, a portion of human behavior. The assumption that there is a strong

Jerome B. Wiesner
President's Science Advisory
Committee
Room
Executive Office Building
Washington, D.C.

Dear Jerry,

Here is a sample of our
handwriting. We have a mean
of three strokes per letter and use
about ten bits per letter

TX-O, Allan Paul and I
offer you our felicitations in your
new job.

Sincerely

Murray Eden

relationship between what the machine must know to write by hand and what humans must know to write by hand is unavoidable.

Eden and Halle have not only thrown light on why people are able to recognize handwriting in a set of scratches on paper, but also have

focused attention on a theoretical approach which will undoubtedly have important implications in the study of pattern recognition—that field in which one asks why it is that people are able to see faces in a bank of clouds or hear sentences in a jumble of sounds.

Opening a Magnet Laboratory

Benjamin Lax, '49, and his colleagues are turning a bakery into a major addition to America's tools for seeking basic knowledge

Photographs by George Woodruff

FIVE YEARS AGO this month Group Report M-35-82 by B. Lax, H. H. Kolm, and D. T. Stevenson of Lincoln Laboratory described *A Continuous Quarter-Million Gauss Magnet Facility*. Now called the National Magnet Laboratory, that facility will be dedicated at M.I.T. next April 30.

One problem—like that of the producer of a Hollywood spectacular—was to get \$6,000,000. That was done and the laboratory was officially established July 1, 1960. More reports and books were written, and technical issues and logistical problems as great as those of any theatrical producer were surmounted. But the analogy to the theatrical world breaks down if carried too far: There have been no explosive departures from the group of stars whose combined skills were required in this case.

Memorial Drive traffic was disrupted for several weeks while water lines were laid from the Charles River to the old Ward Bakery on Albany Street. Most members of the M.I.T. community have been but dimly aware of what was happening, however, and will be properly popeyed on April 30.

From the scientists with whom he works, Assistant Director James M. West has picked up the habit of using a blackboard as a scratch pad. His board, shown on *The Review's* cover, bore both reminders of things to be done and an enumeration of the staff available when the pictures on the next five pages were made.

DIRECTOR LAX is in foreground of the conference at right, with (from left) Eun-Ho Shin, a physicist completing doctoral work at Harvard who joined the laboratory's staff last fall; James M. West, Assistant Director for Administration, and Carl V. Stager, '61 of the scientific staff.

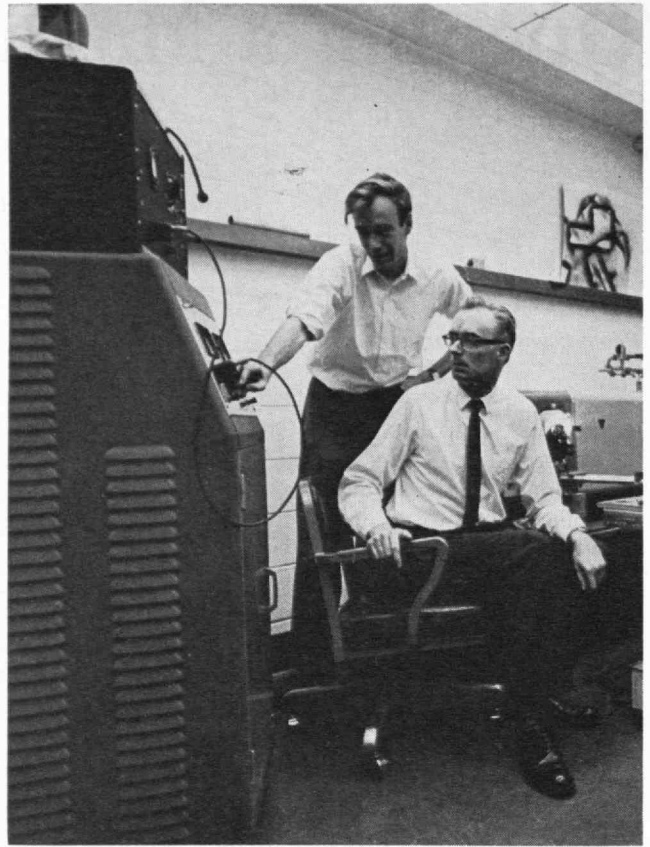


Matter's Basic Properties Will Be Studied in New Ways

THE National Magnet Laboratory's mission is to explore the properties of matter in intense magnetic fields. This will include research and development efforts in solid state, atomic, low temperature, and plasma physics, in millimeter and submillimeter wave generation, in magnetohydrodynamics, and other matters dependent on the magnetic art. Its unusual facilities will be available not only to M.I.T.'s Faculty and students but also to qualified persons from other institutions. All of the research undertaken will be unclassified.

The Air Force Office of Scientific Research contracted with M.I.T. to establish this laboratory as part of its program to support basic research. Work in the Solid State Division of Lincoln Laboratory, under the direction of the new laboratory's Director Lax, showed the potentialities of such a facility, and the feasibility of producing higher magnetic fields was shown in Professor Francis Bitter's magnet laboratory at M.I.T.

Work begun elsewhere already has been transferred to the attractive new quarters in the extensively rebuilt Ward Bakery building on Albany Street, and the apparatus needed for further experiments is being readied now for installation in the row of new test cells.

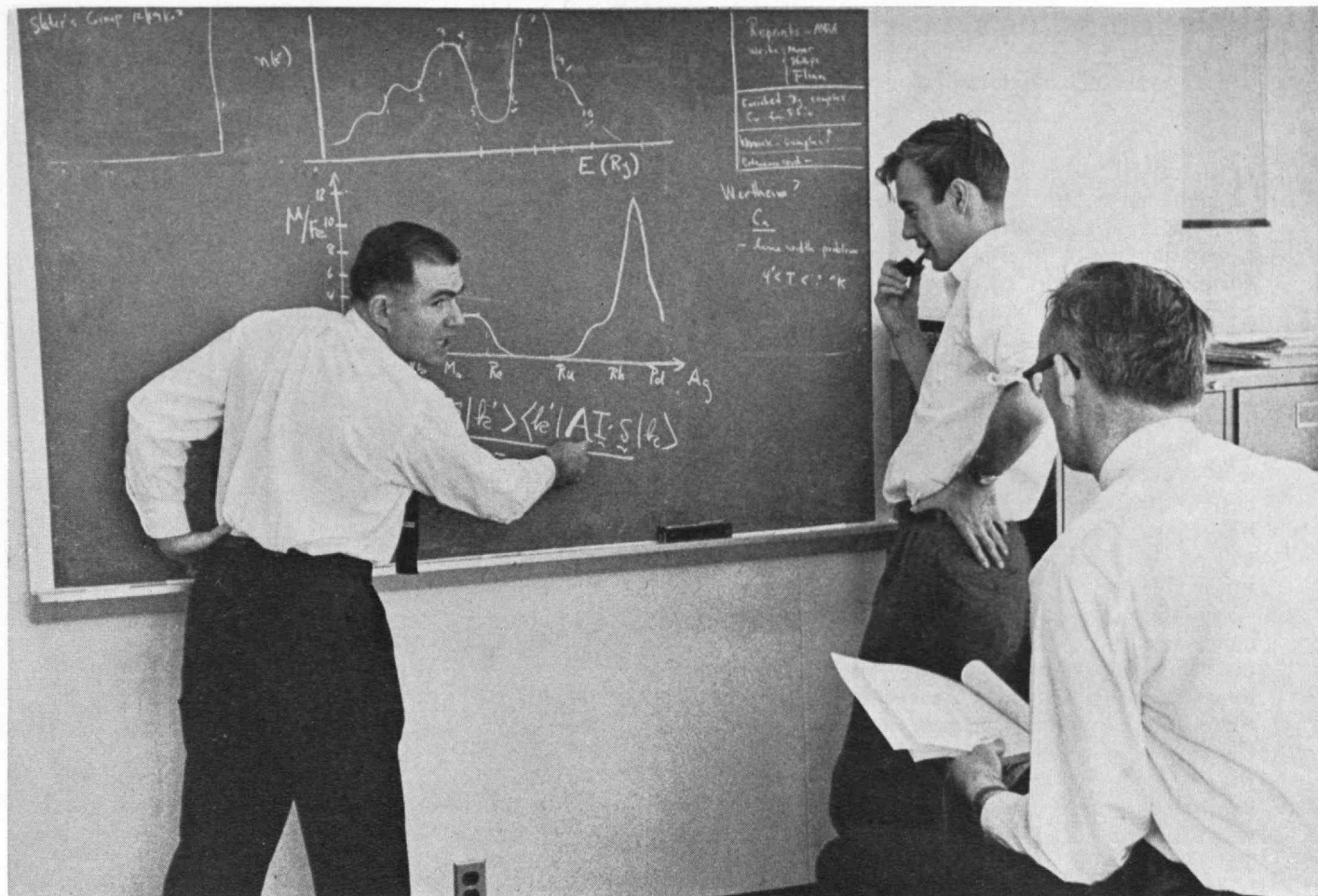


ADJUSTING the power supply for a magnet used in a Zeeman experiment is Carl Stager, with W. Allen Runciman.



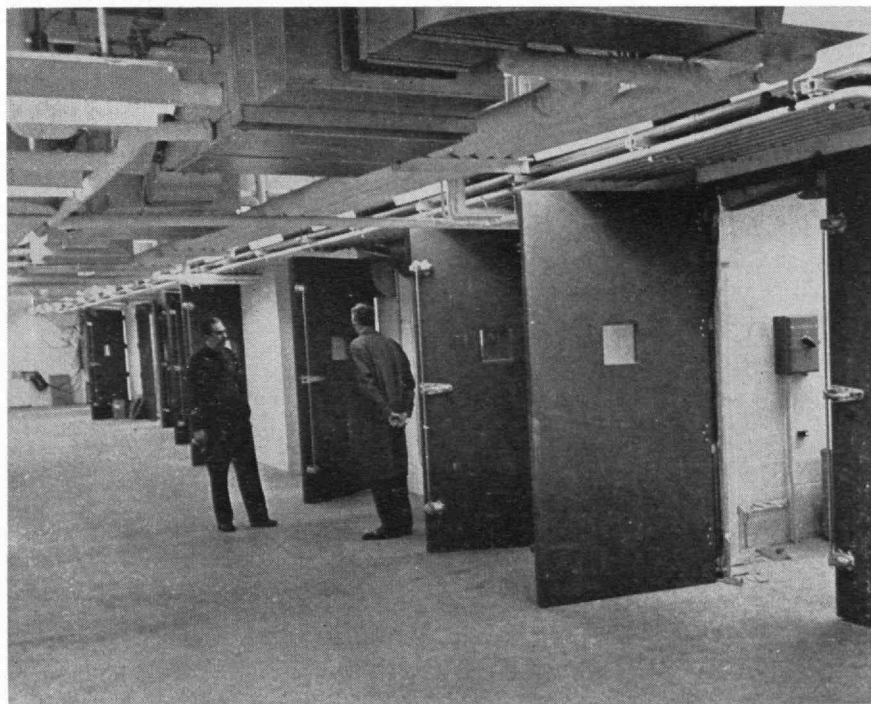
PROFESSOR FRANCIS BITTER supervised construction of the laboratory and will use it for geophysical research. Here he is discussing a Helmholtz coil with John Nolund, technician. It will be used in an experiment in which mag-

netic resonances will be studied optically. In background is his secretary, Cynthia Morin. Partitions along the side of the room will separate desks assigned to graduate students, about a dozen of whom soon will be using these quarters.

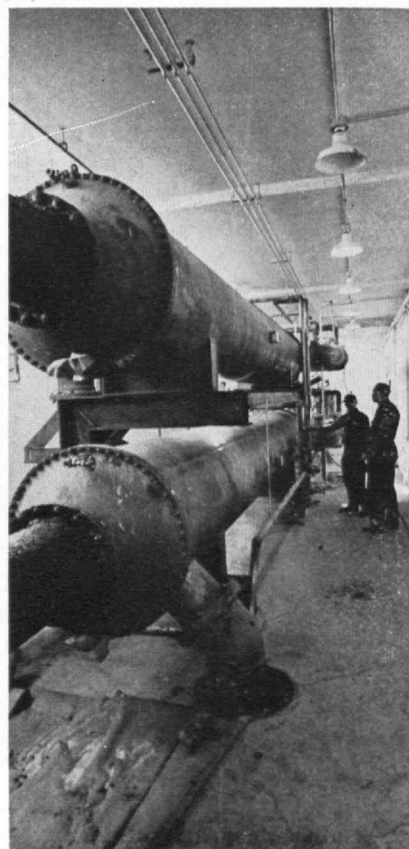


DISCUSSING the results of a paramagnetic resonance experiment is Arthur J. Freeman, '52. Listening are Carl Stager

(with pipe) and W. Allen Runciman. "We were having fun that day," Dr. Runciman recalled when he saw this photo.



EIGHT MAGNET CELLS, each 14-by 40 feet, open off the corridor above, and there are two larger ones behind these. Magnets to be installed in them will be cooled by distilled water, from which heat will be removed in exchangers seen at right. Water in line which carries heat off will discharge it into Charles River.

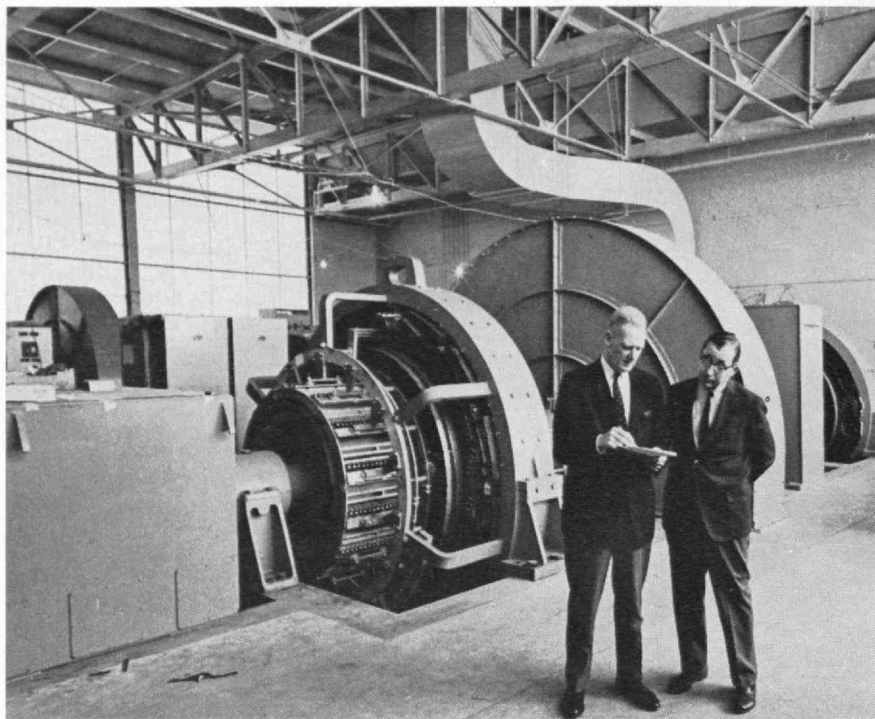


Providing the Power For Great Magnets

TO GIVE researchers extremely high magnetic fields, the National Magnet Laboratory will have a vast amount of ripple-free direct current on tap at its switchboard.

Two big motor-flywheel-generator units will be able to feed 8,000,000 watts (200 volts, 40,000 amperes) into its distribution system. To run the 12,000-horsepower motors in these units, the laboratory will draw 13,800-volt alternating current from the Cambridge Electric Light Company. Power dips will be prevented by storing energy in the flywheels.

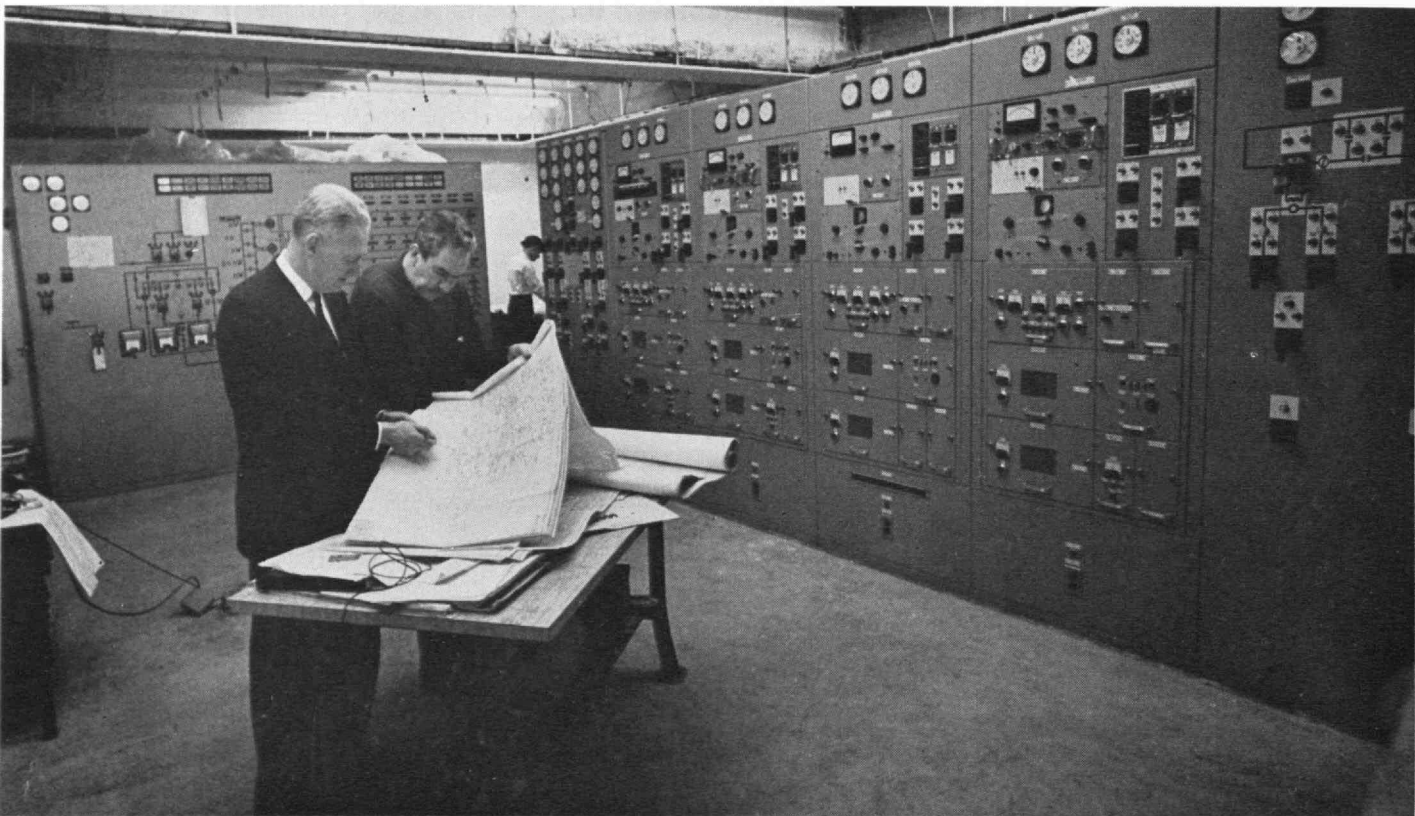
Building this power plant took months and posed difficult logistical problems. Each flywheel weighs 84 tons and is 16 feet high, and getting them from Schenectady to Cambridge was one problem. They were shipped by rail to Framingham, and trucked the rest of the way because of low clearances. This required the use of a low, flat-bed, four-axle trailer rig with 32 tires.



ONE OF TWO big flywheels is directly behind Engineer Smith and Mr. West. Starting motor is at the left; second flywheel is visible in rear.

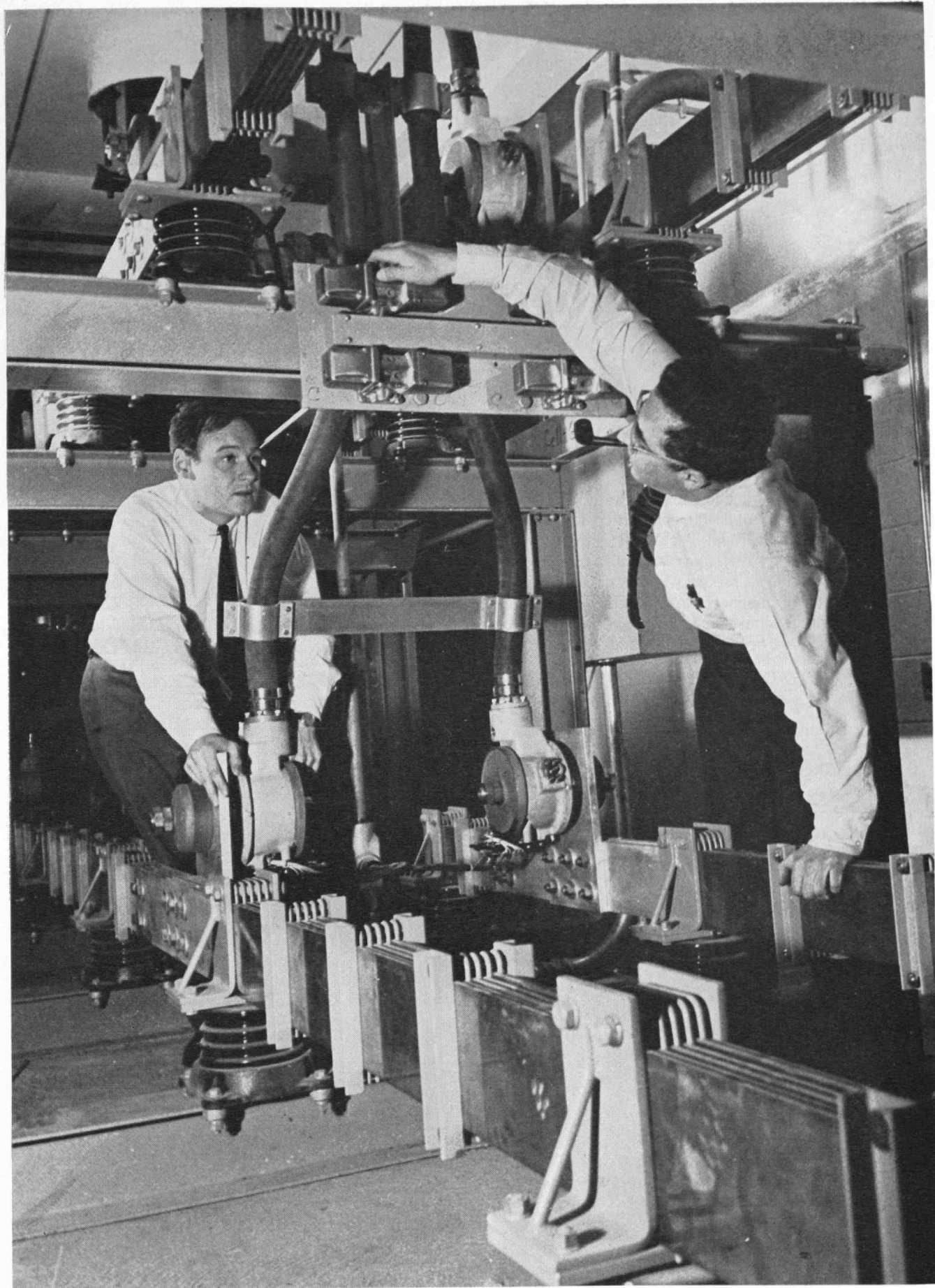
Plant Engineer Frank Smith came to the laboratory after 40 years' experience as an engineer, with Gibbs and Hill, Stone and Webster, and other concerns in England and America.

Jackson and Moreland were the engineers; Perry, Shaw, Hepburn and Dean, architects; and Vappi & Co., contractors. General Electric built the generators, and the I.T.E. the power distribution system.



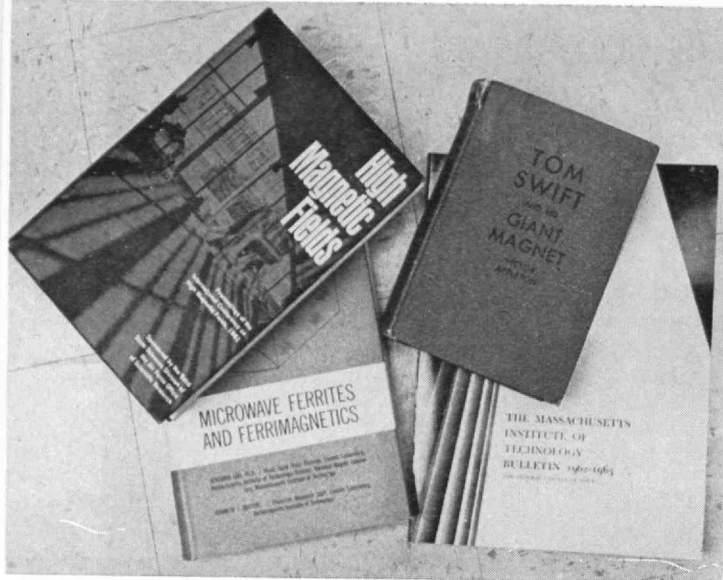
GENERATION OF POWER is regulated from the big board at right and its distribution to magnet test cells from

the board in rear. Examining details of plans in the control room with Engineer Smith (at the left) is William A. Mosher.



POWER DISTRIBUTION includes 80 switches like this one in which conducting surfaces are pressed together hydrau-

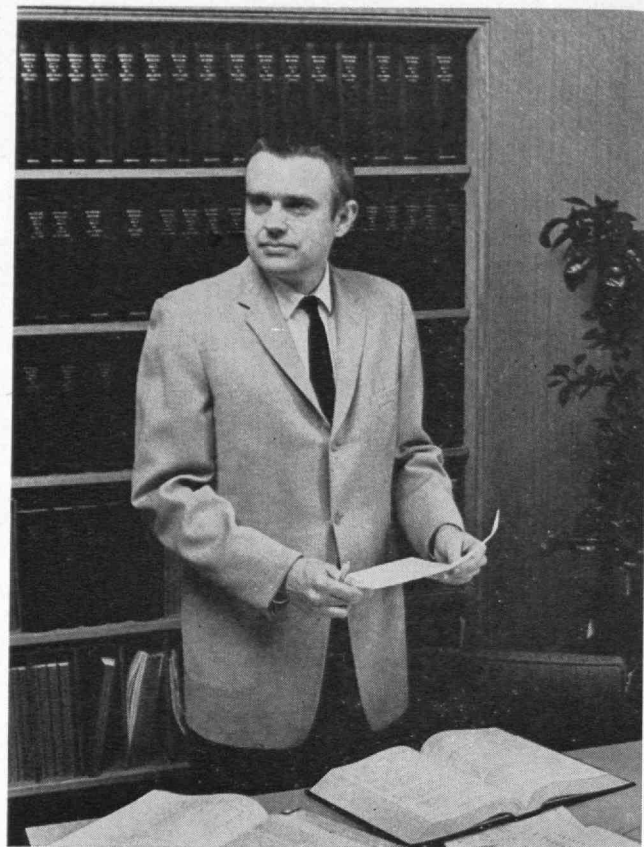
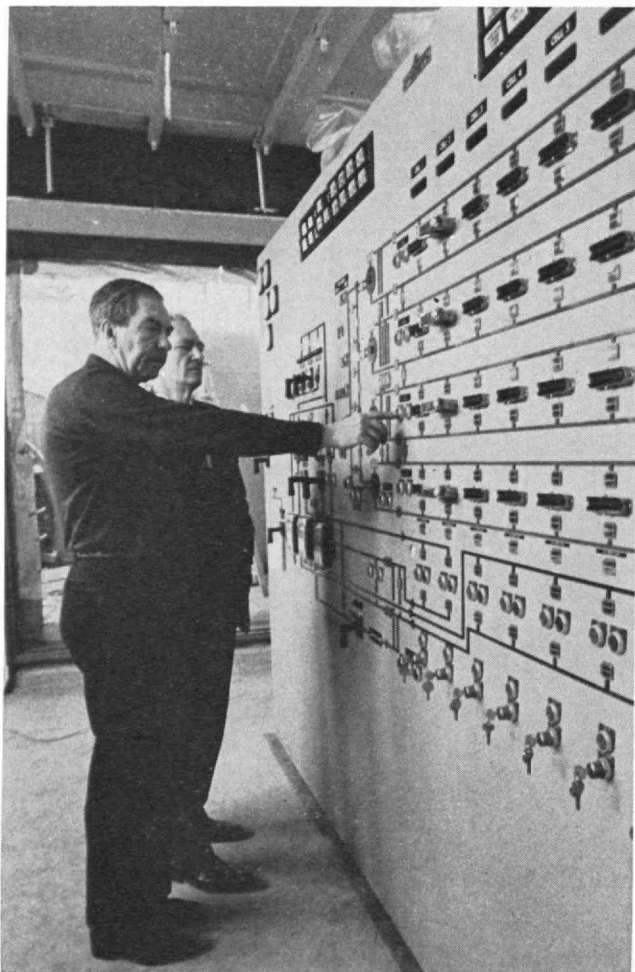
lically. D. Bruce Montgomery, '56 (left), and Henry H. Kolm, '50, invented these remotely controlled switches.



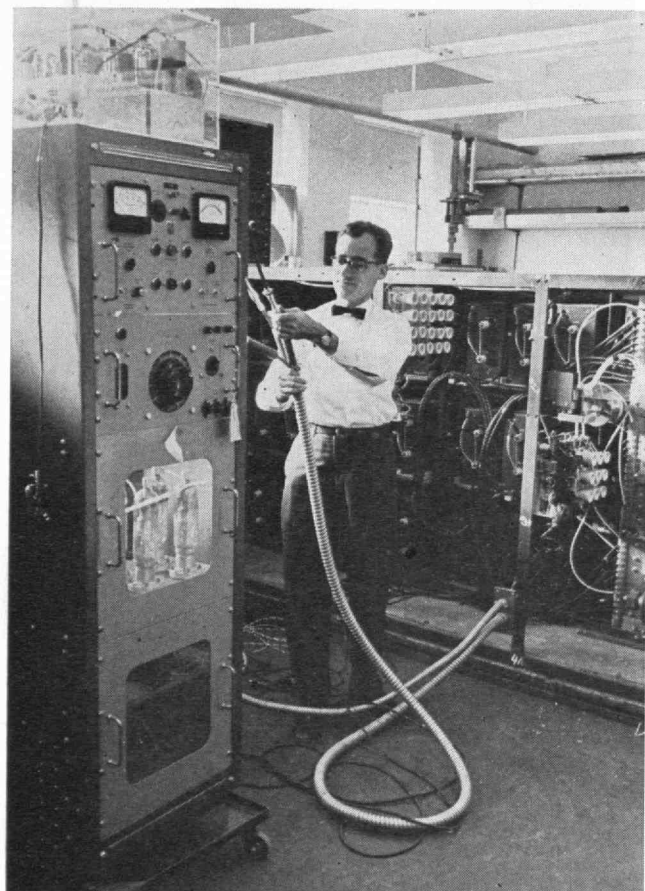
Books, Magnets, and More Books

WORK to be done in the new laboratory was discussed at an international conference in 1961 on "High Magnetic Fields," and The M.I.T. Press gave its builders a copy of *Tom Swift and His Giant Magnet*.

At the board below, power will be available for a variety of types of magnets, many of which will be giants. Some already have been built and will soon be used to seek the data needed to write better books.



ASSISTANT DIRECTOR Donald T. Stevenson, '50, was head of solid state physics group at Lincoln Laboratory.



SIMON FONER is connecting a cable from a capacitor bank to the power supply of a high intensity pulsed magnet.

NEEDED: More Manpower for EMP

Engineering, mathematics, and physical sciences now demand more men with postgraduate degrees

A REPORT from President Kennedy's Science Advisory Committee this winter referred to engineers, mathematicians, and physical scientists as "EMP manpower," and recommended immediate action to increase it.

Professor Edwin R. Gilliland, '33, of M.I.T. was chairman of the panel that prepared this report, and its members included J. Herbert Hollomon, '40, of the Department of Commerce and William Shockley, '36, of the Clevite Corporation.

"Impending shortages of talented, highly trained scientists and engineers threaten the successful fulfillment of vital national commitments," this panel found. "Unless remedial action is taken promptly, future needs for superior engineers, mathematicians, and physical scientists will seriously outstrip the supply. . . . The most effective steps to achieve more manpower with higher training will be those that emphasize high levels of attainment through graduate education."

EMP, the report said, now absorbs the services of three-fourths of all the scientists and engineers in the nation, and six out of seven Federal research and development dollars. To avert a shortage of such essential manpower, the committee urged that the nation:

❑ Increase the number of doctor's degrees each year in EMP to reach 7,500 in 1970 (2,000 were awarded in 1950, and 3,000 in 1960);

❑ Increase the number of students who complete a full year of graduate training in EMP to reach 30,000 in 1970 (there were 9,000 master's degree recipients in 1950, and 12,000 in 1960);

❑ Encourage the strengthening of existing centers of excellence in EMP, develop new such centers, and promote wider geographic distribution of them.

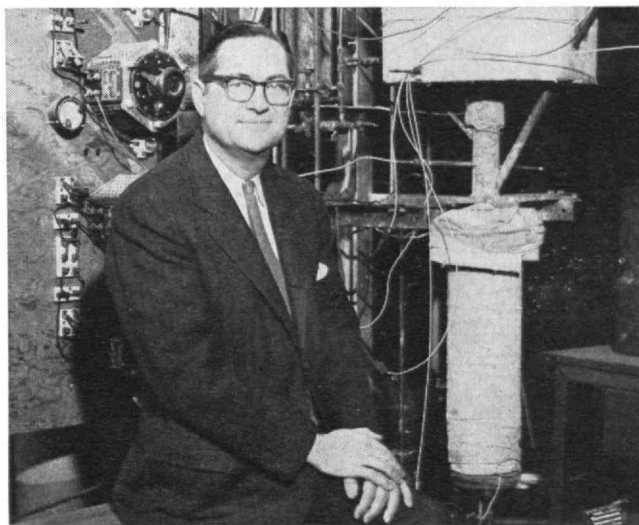
Faced with an offer of a starting salary of \$7,000 or more and one of a much smaller stipend for graduate study, many qualified students may forego the latter. Faculty shortages and educational facilities impose further limitations. The report, therefore, recommended a national program to provide: (1) adequate financial support for all full-time graduate students in EMP; (2) funds to cover the full costs of graduate education in EMP; (3) funds for physical facilities and equipment used; and (4) funds for developing new centers of educational excellence in EMP.

The cost of the program described was estimated at \$580,000,000 in fiscal 1964, \$660,000,000 in 1966, \$710,000,000 in 1968, and \$760,000,000 in 1970. Of these sums, the report suggested, perhaps 60 per cent should be provided by the Federal government, largely through the National Science Foundation, but the states, industry, foundations, and private donors should continue to contribute.

A major portion of the increase in support, the report further proposed, should be in the form of training grants, in order to provide funds to institutions for instruction costs as well as stipends for students, and to increase each institution's responsibility for the identification of the country's promising students at the baccalaureate level.

"The Federal government has emerged as the principal consumer of the output of EMP graduate schools," the report concluded. "Huge projects undertaken by the Government, both within agencies and under industry contract, have greatly increased the demand for professional manpower in EMP. But government responsibility does not end with setting up agencies and letting contracts. It must ensure that there are people of high ability and training on hand to work in these agencies and under these contracts. . . . The relationship of science and engineering to our vital national commitments is such that we cannot postpone the start of a vigorous, and ambitious, National program to accelerate EMP graduate training."

President Kennedy, in releasing the report, urged that it be considered in developing legislative and budget proposals, and went on to observe that: "Sustained growth of excellence in American engineering and science will depend on the efforts of all. It is the students themselves, however, who hold the key to this nation's strength. It is my earnest hope that each college student will consider how valuable additional study will be in enhancing his abilities and potential contribution to the nation, and in bringing him greater satisfaction and rewards."



Prof. Gilliland headed group considering nation's needs.

Institute Yesteryears

Edited by H. E. Lobdell, '17

25 Years Ago

THE INSTITUTE mourned the passing on February 3, 1938, of Professor Emeritus Harry W. Tyler, '84, whose distinguished career as a member of its Faculty had been an inseparable component of its history for 47 years prior to his retirement in 1930.

Upon graduation he became an instructor in the Department of Mathematics; in 1893, a full professor, and in 1901, head of the Department of Mathematics. During 1891-1906, he was secretary of the Faculty, an office which then combined the duties of dean, registrar, and assistant to the president; and during 1892-1897, he served as the fifth secretary of the Alumni Association.

Of him *The Review* recalled, "His unwavering faith in the future of the Institute prompted him to oppose vigorously the proposed merger of Technology with Harvard [in 1904]. When at last the fight had been won, he entered more zealously than ever into the affairs of the Institute, which at that time was passing through a serious financial crisis. His sound judgment and vision contributed importantly to M.I.T.'s subsequent steady development. . . .

"Dr. Tyler was chairman of the Walker Memorial Committee and led the successful campaign to secure funds for this building devoted to student activities."

¶ Congratulations were being extended to *Emory S. Land*, '07, named as chief of the United States Maritime Commission . . . to *Charles A. Kraus*, '08, upon becoming president of the American Chemical Society . . . to *Walter D. Binger*, '16, appointed as commissioner of works, Borough of Manhattan . . . and to Professor *George B. Waterhouse* as president-elect of the American Society of Metals.

50 Years Ago

PRESIDENT Richard C. Maclaurin announced that William Welles Bosworth, '89, of New York City had been selected to be the architect of the "New Technology," and *The Review* noted:

"The question will at once be asked by those not well acquainted with New York, 'Who is Bosworth?' and it is simply necessary to remind such questioners that only four years ago they were asking, 'Who is Maclaurin?' No one needs to ask that today, and the Institute has again shown its ability to seize upon the leaders of the immediate future. Bosworth is a product of the Institute in whom those who are prophets in architecture find the fundamentals and achievements that make him the coming man, with his shadow already across the threshold. . . .

"William Welles Bosworth began his architectural training in the Institute which he joined in 1886, being affiliated with the Class of 1889. After leaving the In-

stitute he entered the office of H. H. Richardson, leaving it after 18 months to become associated with Olmstead in landscape work at Stanford University. Later he studied abroad, going first to London where he worked under the stimulus of Alma-Tadema . . . and next to the Beaux Arts in Paris, where he entered the atelier of Godefrey and Fresnet, soon advancing to spend three years in the atelier of Gaston Redon, a remarkably brilliant man, the architect for the Louvre. . . .

"Returning to this country, he entered the office of Carrere and Hastings for whom he worked on the block plans for the Pan-American Exposition . . . and three years later opened his own office in New York." Among his subsequent clients were John D. Rockefeller, Jr., Frank A. Vanderlip, and the Western Union Telegraph Company for which last-named "he is now engaged upon its new headquarters building, a 30-story white granite building at the corner of Broadway and Dey Street, to cost an estimated five to six million dollars."

¶ On February 6, 1913, at the Park Club in Pittsfield, Mass., 15 Alumni forgathered to found the "Berkshire County Alumni Association of M.I.T.," now titled the Berkshire M.I.T. Club.

75 Years Ago

"THE SEMIES are past, and once more we are all back again at the Institute," commented the editor of *The Tech*. "Well, not all, but most of us are. . . . We trust that you will all keep those good resolutions made about two weeks ago; but, alas! we are pretty sure that you won't."

Adjoining news columns in *The Tech* reported: "The semi-annual examination in Freshman Chemistry has caused many members of '91 to accept lucrative positions, and also, many to leave Tech on account of trouble with their eyes. . . . Mr. Sydney Warren, '88, has temporarily resigned his position as editor-in-chief of *The Tech* on account of pressure of studies."

98 Years Ago

ON MONDAY, February 20, 1865, President William Barton Rogers made the following entry in his diary: "Organized the School! Fifteen students entered. May this not prove a memorable day!"

100 Years Ago

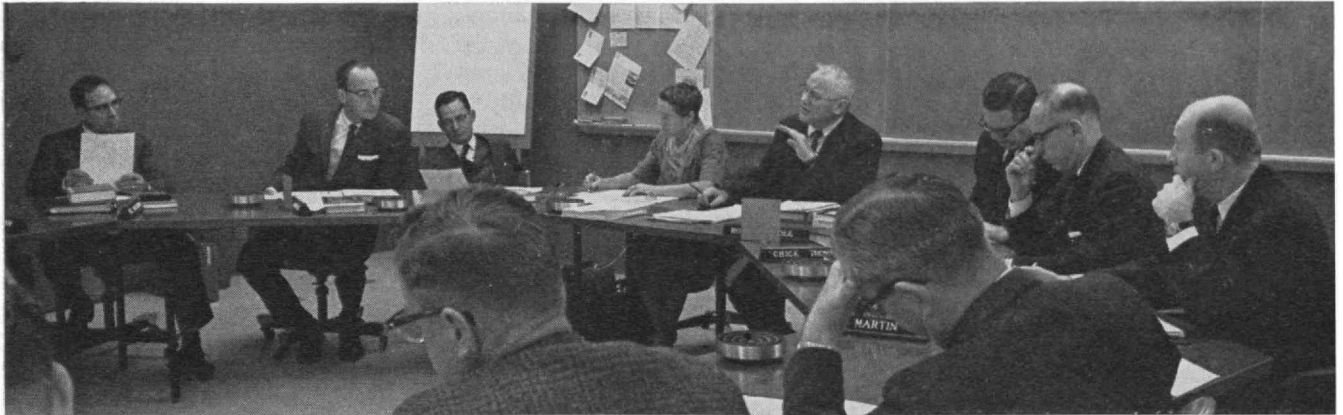
ON FEBRUARY 21, 1863, at the ninth meeting of the "Government" of the Institute it was "Voted, that the Committee on Finance be instructed to proceed immediately, with full powers, to raise the proposed fund [of \$150,000], by contributions."

Whereupon, the minutes continued: "Mr. M. Denman Ross, Chairman of the Committee on Finance, arose and stated that in obedience to the instructions . . . he desired to commence the work assigned to his Committee without delay, and that he would begin by pledging himself \$1,000. . . . A similar amount was then subscribed by Mr. Edward H. Eldredge; and Messrs. Henry B. Rogers and Richard C. Greenleaf subscribed \$500 each."

Learning by the Incident Process

No homework is needed in this variant of the case method that makes group study of human relations both easy and instructive

BY PAUL AND FAITH PIGORS



NINETY-TWO years ago Christopher C. Langdell startled his students at the Harvard Law School. He asserted that the chief business of a law student is to learn how to discern and apply legal principles in "the ever tangled skein of human affairs," and suggested that listening to professors expound legal doctrine was not necessarily the most effective means to that end. A large majority of his class resisted this radical change in learning and hastily dropped his course. Langdell persisted, however, in applying his version of the Socratic method to the study of law and, by building a critical discussion of selected case reports, he helped his students learn to think for themselves.

This now famous case method of teaching gradually spread to other schools. By 1909 Professor Adelbert Ames, one of Langdell's most famous disciples, reported that the case method had been adopted by nearly all the best law schools in the country. Teachers of medicine, social work, and business administration also adopted the case method, and case study is used nowadays in universities all over the world.

In view of such acceptance of case method in academic institutions, it seems surprising that American businessmen continue to rely

Paul Pigors, at the right beside Mrs. Pigors, is professor of industrial relations at M.I.T. He and his wife have been largely responsible for the widespread use of the Incident Process in management training and executive development programs both in this country and overseas.

primarily on lectures and teaching by precept in their management development programs. According to a recent survey of methods used in such programs, case study has the lowest rating. What is accountable?

Experience suggests such reasons as these: Case method takes time, requires skillful leadership in small groups, and traditionally has called for concentrated homework to prepare for discussion. Homework requirements seem to have occasioned the greatest difficulties. The Incident Process is a variant of case method in which homework has been eliminated for members of the discussion group, and its popularity may be attributed to this feature.

The Incident Process as applied to the study of human relations is designed to make it easy and instructive for members of a discussion group to work together—independently, yet co-operatively—in learning from experience. But, as used in seminars for graduate students at M.I.T., the Incident Process is more than just a way of analyzing the experiences of other people in

remote situations. At each meeting, an official observer keeps track of group performance and, periodically, the whole group is invited to focus on the experience of the discussion group itself. In stocktaking and planning meetings, skills and difficulties discussed in connection with remote cases are observed as factors that favor or hinder productive interaction within the study group.

How Does It Work?

To explain this plan for productive interaction, we will first describe the five phases of the process by which group members analyze and work on case reports. Then we will outline a system for job rotation which helps group members get different kinds of experience. Finally, we will touch on the purpose and consequences of stocktaking and planning meetings where participants study the written record of their past achievements and consider possible changes.

The cycle of the Incident Process parallels the steps by which a person makes the most of experience in everyday life. Each step offers oppor-

tunities to practice one or more of five *R*'s: *Reading* for meaning, *Reaching out* (to see a trifling incident as part of a larger situation), *Reducing* (by first summarizing a mass of information and then boiling down that residue to a question, or questions, for decision), *Reasoning* (to work out decisions and actions that are realistic and just), and *Reflecting* (to draw from specific happenings some general principles that can usefully be applied in other situations). The Incident Process requires these five steps:

1. Studying an Incident. Participants begin by reading a short description of some act or event that calls for prompt decision. One Incident, for example, pictures Miss Ordway, a ward attendant in a hospital, insisting—on the day before a major holiday, and a few minutes before she is to begin her scheduled day's work—that she "must" have the whole weekend off to go home. How would you handle this Incident if you were the Assistant Director of Nursing Service?

When an alert person sets to work on such an Incident, he naturally begins at once to *reach out* beyond the single point of climax. In *reading for meaning*, he searches the written words for leads. What questions must be asked to establish the what, where, when, how, and who of the Incident, so that one may see it as part of an ongoing situation and form a considered opinion as to what it means *now* and what it *might mean* (according to how it is handled)?

While reading the Incident, members of the study group engage, silently, in an imaginative exercise. For example, in connection with the Ordway Incident, they ask themselves: "Why, 'must' she go home? In this hospital, what are the rules about requesting time off? Who could replace her, if she did go? What is at stake here for the hospital? And for this ward attendant?"

After a couple of minutes, group members are ready to voice such questions. The first question signals the start of the second step:

2. Getting and Organizing Information about the Case. At this stage, members are invited to reach out from the Incident into the case situation as a whole by questioning the discussion leader. He is the man

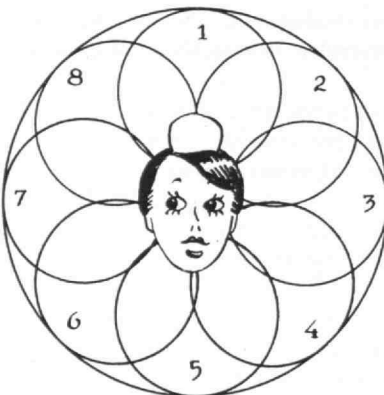
with the facts. After 20 or 30 minutes of fact-finding, a summary is called for, to reveal the essential facts of the case.

Anyone who has ever been confronted with a shapeless mass of information and wondered how to make head or tail of it—for the purpose of taking decisive action—knows how difficult it can be to eliminate nonessentials while retaining the essence of the thing. When asked to sum up factual information objectively, many people tend to interject their opinions, or to overemphasize one side of the case. In the Incident Process, summing up the facts leads naturally to another and more drastic reducing exercise:

3. Determining the Immediate Issue. When an Incident calls for an administrative decision, the question to be decided may be multiple.

Interlinking Issues

IN THE Ordway Incident, key features may be factored out of the situation as a whole and displayed like this:



1. What is at stake for Miss Ordway, if we consider her past, present, and future situation?
2. What does fairness to other personnel require?
3. How should hospital procedures and rules, policies and practices, be interpreted?
4. What shall we be communicating to Miss Ordway and others by whatever decision we make?
5. How decisive is the need for continuous and adequate ward coverage?
6. Of what importance is it that this Incident has shown flaws in our system of supervisory control?
7. How decisive is the acute shortage of available personnel?
8. How important is it that Miss Ordway is under contract to give at least two weeks' notice in writing if she wishes to terminate her employment?

For example, when confronted with Miss Ordway's last-minute request for time off, the administrator must decide: What shall I say to Miss Ordway, now? Under the circumstances, should she be given the weekend off, or not?

It isn't always easy to separate issues from decisions. When asked to *define* an issue, many people find it natural to say how they would *decide* the issue. But many case students have found it helpful to pause on the brink of decision and ask: What is at stake here? What key factors in this situation do we need to take into account before we make a decision?

When group members have clarified what is at stake, even for the short run, and agreed on what needs to be decided immediately, they are ready for the next phase:

4. Decisions and Reasoning. Each member of the study group spends 10 or 15 minutes working out, and jotting down, his own decision and his supporting reasons. This part of the Incident Process sometimes proves unexpectedly challenging. Many people who are accustomed to making decisions are not in the habit of thinking out reasons. Nevertheless, as one supervisor put it: "People don't jump to a command, as though they were animals. You have to give reasons."

An easier and more enjoyable way to work out a demonstrably reasonable opinion is to confer with like-minded members. In a group using the Incident Process, subcommittees are formed as soon as a quick survey has shown what the component opinion groups are. The consolidated reasoning of each opinion group is then briefly stated by a spokesman, or presented in role playing. The time is then ripe for the fifth step:

5. Reflecting on the Case as a Whole. In this culminating phase of case analysis, the whole group gets together again to *review* the case situation. The purpose of looking back over the whole sequence of events and behavior is to look ahead realistically. The key question at this stage is: *What can we learn from the case, and from each other?*

Group members are invited to cite their firsthand experience, and to consider general ideas that have been formulated in connection with cases previously discussed. For ex-

ample, in the case where Miss Ordway precipitated an Incident, what may be learned about the advantages and risks of treating one organizational member as a special case? What general ideas emerge from that situation, and are confirmed by experience elsewhere, about supervisory responsibilities for establishing and re-enforcing rules? Reflective analysis can be the most instructive part of case study, and it becomes increasingly practical as members of study groups apply it to their everyday experience.

So much for the Incident Process as a cycle of case analysis, offering practice in the five R's of productive group discussion. Other skills—including the familiar management functions of planning, organizing, staffing, directing, co-ordinating, and controlling—are called into play as participants serve the group in a variety of roles. This is done to enable them to gain experience by job rotation.

Role Assignments

At the first meeting of a group using the Incident Process, everyone except the course director functions as a *production worker*. But while recreating the case situation as a whole, and discussing reasoned decisions, opportunities arise for upgrading; e.g., to the positions of *summarizer* and of *spokesman* for an opinion group.

As soon as group members get the hang of the Incident Process, they begin to take turns in two leading roles. One of these is the role of *Discussion Leader*. This requires the exercise of line management skills. The other role is that of *Observer-Reporter*, which is essentially a staff position.

Two-man teams work together in these roles throughout a production cycle which covers: (1) selecting a case for discussion, (2) making a discussion plan (writing an Incident, and making an outline which contains both the facts of the case and a flexible plan for leading a group through all five phases of the Incident Process), (3) presenting the case to the group, and (4) writing a report on the case discussion. This report is given to all participants to supplement their own impressions, and as resource material for stocktaking meetings. The Ob-



Professor and Mrs. Pigors conducted seminars last summer in Japan. The two participants pictured here are engaged in "role-playing."

server is responsible for this report.

At best, every member of the discussion group has at least one turn in each of these leading roles. Carrying out such leadership responsibilities offers opportunities to practice and test skills in:

1. Planning. What case will prove interesting and instructive for this particular group, now? What stage of developments in the case selected will make an effective Incident? What planning for each phase of the Incident Process will help group members get quickly to the heart of the case?

Directing the work of other people calls for flexibility, willingness, and ability to think on one's feet. Such skill is always needed by the leader of a discussion group. Insight into a leader's adaptability can be obtained by reviewing his written plan for the meeting, in the light of an accurate report as to what actually happened.

2. Organizing and Staffing. Each Discussion Leader has an opportunity to test his practical judgment: in spotting persons willing and able to function effectively as summarizers, helping the group at large get sorted into opinion groups, and perhaps selecting key personnel for role-playing, or for sharing with the group some firsthand experience.

3. Directing, Co-ordinating, and Controlling. The immediate success of a case discussion, as an exercise in self-education guided by leadership, depends in large part on skills and attitudes of the leader. Can he establish a climate that is friendly and informal; stimulate interest in the work to be done, and keep the talk centered but never stuck on

dead center? A skillful leader helps to keep the discussion moving forward but not moving so fast that slow thinkers get stranded. He may need to clarify (or point up) some comment that doesn't seem clear (or interesting) to participants. He is responsible for helping group members make effective use of available time (slowing up to meet an unexpected need and moving a little faster later to take up the slack). At best, the leader functions in ways that liberate (rather than repress) the energy and initiative of group members.

Each member has special opportunities to learn from experience in a study group when his turn comes to undertake the job of official Observer-for-the-day (with the responsibility of reporting his observations to the group). An Observer-Reporter needs to exercise important communication skills. How accurate and appreciative is his listening? Are his interpretations realistic and intelligent? Has he faithfully portrayed essential features of the meeting, including statements of minority opinion? Are his recommendations and criticisms offered in ways that are challenging yet acceptable?

In both these leading roles (as Discussion Leader and as Observer-Reporter) group members have opportunities to meet the responsibility of:

4. Serving as Representative for Group Purpose. A Discussion Leader can foster agreement by the way he sums up the sense of the meeting. And by playing down disagreements he can speak for long-term aims of the group. The

(Concluded on page 40)

New Books

COUNT RUMFORD, Physicist Extraordinary, by Sanborn C. Brown, '44 (Doubleday Anchor, 95 cents), is one of the Science Study Series of paperback books. Its author is professor of physics at M.I.T., and the review which follows is by Robert K. Weatherall, Associate Director of Admissions.

HAD M.I.T. existed in 1769, a 16-year-old boy in Woburn, Mass., might well have written to someone here: "Sir, Please to give the Nature, Essence, Beginning of Existence, and Rise of the Wind in General, with the Whole Theory thereof, so as to be able to answer all Questions relative thereto." Instead, he wrote to his 29-year-old friend Laommi Baldwin.

Laommi was a bright fellow; he became a colonel in Washington's army and later made a career in canal-building. He also developed the Baldwin apple. But his young friend was even brighter. Born plain Benjamin Thompson, he became a British knight and a count of the Holy Roman Empire.

Benjamin's scientific genius would have made him a brilliant candidate for M.I.T., but he had a degree of self-centeredness and an eye for the main chance that would have raised questions in the mind of anyone concerned with the personal qualities of applicants. The year after he quizzed Laommi about the wind he lost his job in a Boston drygoods store because his employer oftener found him "under the counter with gimlets, knife, and saw constructing some little machine or looking over some book of science, than behind it arranging the cloths or waiting upon customers." His family then apprenticed him to a doctor, but two years later it seems to have given up trying to place him in a trade or profession. He had worked as a tutor on two occasions, and he then accepted an invitation from the leading clergyman in Concord, N.H., then called Rumford, to be a tutor there.

It happened that the clergyman's 30-year-old daughter was the widow of one of the richest men in the colony. Less than four months after Benjamin arrived in Rumford, he and she were married. From being a poor schoolteacher, Benjamin became at 19 all that her first husband had been in New Hampshire society. But he still put scientific questions to his friend Laommi. "A certain cistern," for example, "has three brass cocks, one of which will empty it in 15 minutes, one in 30 minutes, and the other in 60 minutes. Query: How long would it take to empty the cistern if all three cocks were opened at once?" *

In rising so fast in the world, however, Benjamin moved away from those like Laommi who was to take the Colonists' side in the forthcoming war. As an energetic major in the militia, assiduously serving the governor, he alienated the local citizens. Two years after

he was married, he escaped an angry mob by galloping off to Boston. He never saw Concord again, and saw his wife only once again briefly.

In Boston he made himself useful to General Gage while protesting his loyalty to the Colonists. Laommi believed his protestations, as have many since, but a letter in secret ink to General Gage shows that he was spying on the activities of the Minute Men for the British. This was a time when anyone who did not identify himself clearly with the Colonists was suspected by them and, when Washington besieged Boston, Benjamin took refuge in the British ranks. At their evacuation in 1776 he sailed for London.

The careers of most men would have suffered from such a turn of events, but not Benjamin's. In London he offered his services to George III's Secretary of State for the Colonies and almost immediately became his private secretary. In 1780 he became Under Secretary of State for the Northern Department. This position gave him responsibility for equipping the British forces still in America and, true to his scientific bent, he began to examine ways in which their equipment might be improved. As he did throughout the rest of his life, he tried to understand the basic principles concerned as a first step to suggesting practical improvements. He studied guns and in 1781 won election to the Royal Society.

In this same year, however, he suffered another reverse which might have been his ruin—or worse. La Motte, a Frenchman, was arrested for passing information to the French about the British fleet. Who gave him the information was not divulged at the trial, but gossip pointed an incriminating finger at Thompson and he thought it best to hasten back to the war in the Colonies. La Motte was hanged, drawn, and quartered.

When Thompson returned to England at the conclusion of peace in 1783, London did not welcome him, and he sought his fortune on the Continent. He wandered for a time, spying for the British, but within a year he had sufficiently convinced the Elector of Bavaria of his talents to be appointed a military aide at his court.

In the next 11 years Thompson became the most important man in the Elector's government. As Minister of War, Major General, Chamberlain of the Court, and State Councillor, he introduced revolutionary changes in the Bavarian army and in the organization of Bavarian society. He planned these changes with great care, always starting with an enquiry into first principles. For a variety of practical reasons, he became interested in the nature of heat. He disputed the prevalent idea that heat was a fluid—*caloric*—suggesting rather that it was a phenomenon of motion. He also studied convection. From his research, he proposed new ways of making clothing, chimneys, and stoves. He changed the way the Bavarian soldiers cooked their meals in the field and in time his suggestions made their mark on all the kitchens of Europe. In 1792, in gratitude for his many services, the Elector gave him the title of Count Rumford.

It was impossible for a man of his temperament to accomplish so much without making enemies, and in 1798 the Elector thought it wise to send him out of the country as his Minister to Great Britain. Rumford left

(Concluded on page 32)

*For those who have forgotten their 18.01 the answer is 8.57 minutes.

How can we help computers read more?

U V W X Y Z , 2 3 4
5 6 7 8 9 a b c d e

u v w x y z , 2 3 4
5 6 7 8 9 a b c d e

**The experimental
system can also**

настоящей статьи

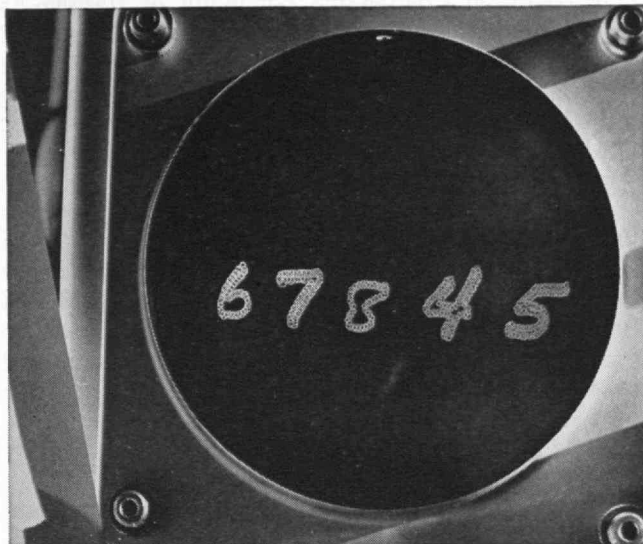
Первая серия проводи

Upper or lower case, typewritten or printed, good registration or bad, these letters are all recognizable to IBM's experimental multi-font reader.

Transforming source information into machine codes is the slowest step in data processing. To make it possible to enter data directly, optical-scanning and magnetic character-sensing devices have been developed. However, most of these machines have been able to read only specially designed type faces. Now IBM has built experimental devices for optically reading a wide variety of printed and typewritten material—and even handwritten numbers.

The chief obstacle to automatic print reading is the variation in type styles found in printed and typewritten information. To overcome this obstacle, IBM scientists have developed an experimental character recognition system which can accept many different type fonts, sizes, and printing qualities in both the Cyrillic and the Latin alphabets. The system determines its own criteria for distinguishing among characters. As it identifies characters, it estimates the reliability of its recognition. After a few minutes it can read text in type styles for which it had not previously been adjusted.

The experimental character recognition system is a form of self-organizing machine. It works out its own methods of distinguishing one character from another in each alphabet it encounters by deriving 96 unique reference measurements which are used to identify each character. The computer programs which aided in the design of this machine represent an advance in character recognition research.



Written in different styles, these numbers can be recognized by an experimental reader whose scanning beam detects line edges by traveling a circular path around the characters.

An equally important step toward more direct entry of data has been the development of an experimental system which recognizes handwritten numbers despite variations in individual writing styles. This system thus solves one of the most difficult problems in character recognition. It differs in its optical reading technique from the multi-font reader, making use of "recognition logic" derived from statistical summaries of the contours of sample handwritten characters. These samples were collected under uncontrolled writing conditions. The scanner in this experimental system generates voltage wave forms analogous to character outlines. The system analyzes these wave forms and records its identification on IBM cards. In a recent test at Tufts University, 200 people, after brief instruction on avoiding excessive distortion in their writing, submitted more than 100,000 numerals to the system. It recognized 98.5% of them correctly, indicating that it may possess the flexibility required to sense large volumes of handwritten numerals in computer systems of the future.

If you have been searching for an opportunity to make important contributions in character recognition, programming systems, space, or any of the other fields in which IBM scientists and engineers are finding answers to basic questions, please contact us. IBM is an Equal Opportunity Employer. Write to: Manager of Professional Employment, IBM Corporation, Dept. 615B, 590 Madison Ave., N.Y. 22, N.Y.

New Books

(Concluded from page 30)

for London but found when he got there that the King would not accept as a minister from another government a man who was in fact a British subject. That at least was the excuse given. Rebuffed by both Britain and Bavaria, Rumford turned unblushingly again to his native country. He discussed with the American ambassador in London the possibility of starting an American military academy. The ambassador relayed the proposal to President John Adams who received it with some sympathy. How near Rumford came to being the first superintendent of West Point is hard to say; but there were second thoughts, prompted no doubt by recollections of old gossip.

Forced to remain in England, Rumford devoted his energies to another scheme. This was to start in London a sort of M.I.T.—“a public Institution for diffusing the knowledge and facilitating the general introduction of useful mechanical inventions and improvements, and for teaching by courses of philosophical lectures and experiments the applications of Science to the common purposes of life.” He was remarkably successful in getting the necessary support from the public and in 1800 the Royal Institution opened its doors.

The following year Rumford appointed young Humphry Davy as an Assistant Lecturer. Davy's lectures were an outstanding success and Rumford was able to record that “the Royal Institution is not only the fashion, but the rage.” However, once again Rumford's personality aroused hostility and in 1802 he left London for Paris. A reason for his sudden leaving was undoubtedly the warmth he felt toward another wealthy widow, this time the strong-willed widow of the great Lavoisier. . . . But it would be unfair to tell more of Rumford's extraordinary story. It has been told too well in the book which Professor Sanborn C. Brown has written for the Physical Science Study Committee.

Professor Brown is noted in the classroom and in the laboratory as an expert on gaseous plasmas. At home, he has an unrivaled collection of Rumford mementos which he has gathered over the years, and he is undoubtedly the foremost living authority on the remarkable Count. One's only criticism of the book is that it is too short. A naïve Nineteenth Century biographer who set out to write a “brief paper” on the Count ended up with a tome of nearly 700 pages. In confining himself to 180, Professor Brown has had to omit much.

Professor Brown suggests, as a sort of moral to his story, that while Rumford sought fame, the fame he achieved during his life faded after his death because of the low opinion people had of him as a man. I would dispute this. No doubt he is little known now in his own country, which he left early and under a cloud, but in England, where the Royal Institution still exists, he remains at least as famous as the more engaging Humphry Davy.

Have You Seen These Books?

RECENT PUBLICATIONS especially likely to interest M.I.T. Alumni have included:

Applied Optics: Supplement on Optical Masers, with an introductory editorial by Charles H. Townes (Applied Optics, 1155 16th Street, N.W., Washington, D.C., \$5).

Encyclopedia of Chemical Technology (in 18 volumes), Volume I, 2d Edition; Anthony Standen, '29, Executive Editor (Interscience Publishers, John Wiley & Sons, Inc., \$35 per volume).

Vector Mechanics for Engineers: Statics and Dynamics, by Professor Ferdinand P. Beer of Lehigh University and Professor E. Russell Johnston, Jr., '47, of Worcester Polytechnic Institute (McGraw-Hill Book Company, Inc., \$10.75).

DEEP SEA, HIGH MOUNTAIN, by Elliott Roberts, '21 (*Little, Brown and Company*, \$3.75), is a book for young people. John J. Rowlands, Director of the M.I.T. News Office from 1925 to 1957, wrote the review of it below.

IF YOU have ever come upon a bronze marker imbedded in a coastal ledge or high on a hill that looks to the sea you have probably discovered evidence of the world-wide activities of the U.S. Coast and Geodetic Survey. Ask any ship's captain about the importance of the Survey and he will tell you that without its studies of the oceans, their distances, depths, and tides, he would not be able to navigate safely. Without the charts made by the Coast and Geodetic Survey, modern air services could never have become a world-wide system of reliable transportation.

In *Deep Sea, High Mountain*, Captain Elliott Roberts, '21, long a member of the Coast and Geodetic's technical staff, sets out to tell in a simple, straightforward style just what the Survey is and how it works. The result is a story of excitement and adventure based on projects from the Arctic to the tropics, and the reader is constantly reminded of the extraordinary standards of precise measurement which mark every step of the Survey's work on land, sea, and in the air.

Congress authorized a coastal survey in 1807 because of the disastrous loss of ships which had no charts to guide them. The U.S. Coast and Geodetic Survey did not, however, make any serious progress until 1832, when Ferdinand Hassler, a native of Switzerland, and an advanced mathematician, was chosen to head it. The first important operation, a survey in 1835 of the New York harbor area, brought dramatic results, for rocks and shoals were found and marked on charts for New York as well as part of Long Island Sound. The most dramatic achievement was discovery of the Sandy Hook Channel leading to New York harbor, and the survey was gradually extended to the coast from Rhode Island to Delaware Bay. Now the U.S. Coast and Geodetic Survey, a great scientific complex of instruments and equipment with its own ships and planes, operates the world around on a scale which calls upon almost every branch of science and engineering.

It was the late Captain William E. Parker, '99, for some years Chief of the Division of Coastal Surveys, who was called from his administrative post in 1931 to undertake a survey for new charts of George Banks, some 200 miles east of Cape Cod. The importance of this project is explained by the position of this great undersea bank in the path of ships approaching the Atlantic Coast from the east. The charts produced by Captain Parker's soundings and studies of weather conditions and tidal currents constituted one of the most important contributions of the Coast and Geodetic Survey to navigators.



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Individuals Noteworthy

(Continued from page 6)

New Posts

NAMED in the news of promotions, elections, and appointments recently were:

Samuel I. Zack, '22, as District 4 Director, American Society of Civil Engineers . . . *Julius A. Stratton*, '23, as a Trustee, The Carnegie Foundation for the Advancement of Teaching . . . *Robert T. Dawes*, '26, as President, Hudson National Bank;

Charles T. Dwight, '30, as Head, the University of Hartford Research Institute . . . *Francis A. Gregory*, '31, as Assistant Director, Office of Manpower, Automation, and Training, U.S. Labor Department . . . *William B. Adams, Jr.*, '33, as Vice-president, Production, John E. Cain Company, Cambridge;

Outerbridge Horsey, '33, as U.S. Ambassador to Prague . . . *Maxwell D. Millard*, '33, as Administrative Vice-president—Commercial, U.S. Steel Corporation . . . *Robert M. Dalton*, '35, as General Manager, Tonawanda (N.Y.) Plant, J. & A. Keller Machine Company, Inc.;

George L. Estes, Jr., '39, as Vice-president, United Aircraft International . . . *Ernest R. Kaswell*, '39, as President, American Association of Textile Chemists and Colorists . . . *Donald T. Richardson*, '40, as General Manager, Aerospace and Defense Service Engineering Department, General Electric;

Edwin G. Kispert, '41, as Proposition Manager, Boiler Division, The Babcock & Wilcox Company, Barberton, Ohio . . . *John Peterson*, '43, as Vice-president and General Manager, The Blanton Company, St. Louis . . . *Robert V. Laney*, '44, as Manager, Quincy Shipyard, Bethlehem Steel Company;

Louis H. Roddis, Jr., '44, as President, Atomic Industrial Forum, Inc. . . . *Dr. Paul Talalay*, '44, as Professor of Pharmacology and Director of the Department of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine . . . *Dr. Peter P. Poulos*, '47, as a member of Open-Heart Surgery Service, B. S. Pollak Hospital, Jersey City;

John C. Avallone, '48, as Manufacturing Manager, Boston Street,
(Continued on page 36)



THE BOSTON STEIN CLUB has set a new goal of \$200,000 for M.I.T. scholarships, Oscar H. Horovitz, '22, announced at its December 10 meeting in the Faculty Club. Members have already given or pledged \$170,000. Mr. Horovitz is (from left) with Arthur Miller, '34, Club President, and Dean Gordon S. Brown, '31, of the School of Engineering, who spoke at the club's meeting.

Future M.I.T. Club Meetings

Following are the dates and principal speakers as announced at the time of printing for M.I.T. club meetings during February and March, 1963. For more details consult the club secretary in your city.

February 6, 1963—San Francisco—D. P. Severance, '38

Secretary: Martin D. Robbins, '56, McGraw-Hill Publishing Company, Inc.

February 12, 1963—Route 128—Professor Roy Lamson

Secretary: Robert E. Anslow, '54, Raytheon Company, Lexington

February 12, 1963—Kansas City—Dr. C. Stark Draper, '26

Secretary: Beverley J. Kirkwood, '49, A. C. Kirkwood & Associates

February 14, 1963—Boston—Dr. Peter T. Demos, '51

Secretary: Warren W. Heimbach, '58, 120 Sylvan Street, Danvers

February 21, 1963—Rochester—H. B. Kane, '24

Secretary: John D. O'Brien, '51, Eastman Kodak Company

February 26, 1963—Washington, D. C.—Program to be Announced

Secretary: Paul M. Robinson, Jr., '44, 8009 Jansen Drive, Springfield, Va.

February 26, 1963—Milwaukee—Professor Roland B. Greeley

Secretary: Kenneth L. Holmes, '51, Johnson Service Company

March 13, 1963—Newark—Program to be Announced

Secretary: Colonel Carlo N. DeGennaro, '53, 905 Hudson Street, Hoboken

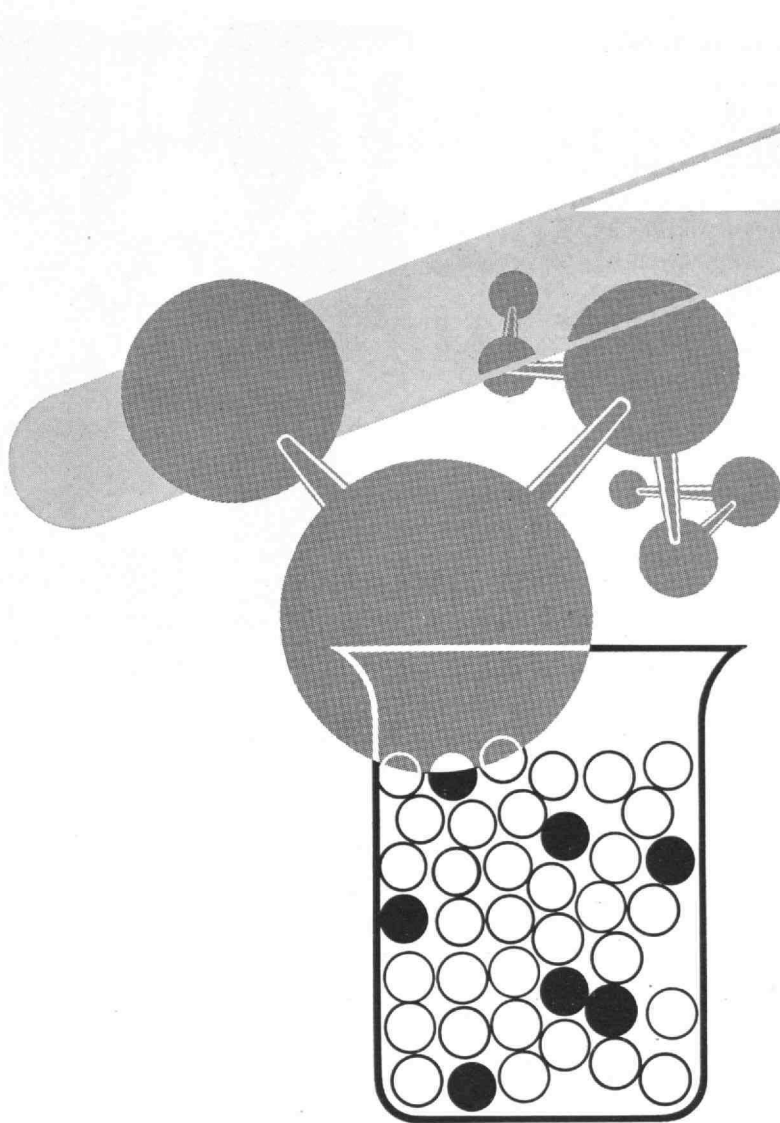
March 13, 1963—Rochester—President Julius A. Stratton, '23

Secretary: John D. O'Brien, '51, Eastman Kodak Company

March 14, 1963—Boston—Panel on Starting Small Businesses

Secretary: Warren W. Heimbach, '58, 120 Sylvan Street, Danvers

Additions to this column of meeting announcements are welcome. Copy is due February 21 for the April issue of *The Technology Review* and should list your club meetings for April and May. Send your copy to: Alumni Secretary, M.I.T. Alumni Association, Room 1-280, Cambridge 39, Mass.



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Individuals Noteworthy

(Continued from page 34)

Salem, Special Products, and Ipswich (Mass.) Transformer Operation, Sylvania Electric Products, Inc. . . . *Robert H. Bliss*, '48, as General Manager, Harmonic Drive Division, United Shoe Machinery Corporation . . . *Walter R. Connell, Jr.*, '48, as Product Manager, Rubber Chemical Sales, B. F. Goodrich Chemical Company;

Haig S. Yardumian, '48, as Chairman, Malden Redevelopment Authority . . . *Alvin V. Block*, '49, as Director of Engineering Operations, Physics Research Division, Geophysics Corporation of America . . . *Felix Haas*, '49, as Dean, School of Science, Purdue University . . . *Joseph R. Passonneau*, '49, as Professor of Architecture, 1963-1964, Harvard University;

Horton R. Shaw, '49, as Counsel, New York State Division of Housing and Community Renewal . . . *Albert E. Cookson*, '51, as Vice-president and General Manager, ITT Intelcom, Inc. . . . *Robert F. Couillard*, '52, as Manager, Systems and Procedures, Wallingford Steel Company;

Ralph R. Ragan, '52, as Manager, Sudbury (Mass.) Operation, Raytheon Co. . . . Lt. Comdr. *Roderick M. White*, '56, as Associate Professor, U.S. Coast Guard Academy.

Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

Craig P. Hazelet, '18, named as Louisville's Man of the Year by the Advertising Club of Louisville . . . *Cyril Stanley Smith*, '26, the James Douglas Gold Medal by the American Institute of Mining, Metallurgical, and Petroleum Engineers;

E. Robert de Luccia, '27, the 1962 Engineer of the Year Award by the Professional Engineers of Oregon . . . *Richard Roth*, '28, the Sidney L. Strauss Memorial Award by the New York Society of Architects . . . *James T. Duane, Jr.*, '53, named as the nation's Outstanding Young Electrical Engineer of the Year by Eta Kappa Nu, and *Francis A. Gicca*, '53, who received honorable mention for the award from the national honorary society.

Veterans Retire

FOUR of M.I.T.'s employees retired January 1 after a total of 134 years' service. They were *Abner Stodder* (51 years), an electrician and first President of the Quarter Century Club; *George Broussard* (39 years) of the Department of Civil Engineering; *Ethel Cogley* (26 years) of the Institute's Photo Service; and *Benjamin Diver* (18 years) of the Research Laboratory of Electronics Photo Laboratory.



DOUGLAS P. ADAMS, Associate Professor of Engineering Graphics, represented M.I.T. at a recent meeting of educators and researchers arranged by the Reynolds Tobacco Company.

Faculty Distinction

HAROLD E. EDGERTON, '27, of the Department of Electrical Engineering, last December 5 became the second recipient of an award established by *Gordon Y. Billard*, '24, in recognition of his contributions to the interests of students. Professor *Samuel J. Mason*, '47, is the only previous recipient.

Professor *John F. Elliott*, '49, will give the Henry Marion Howe ['71] lecture this month at the meeting of the American Institute of Mining, Metallurgical, and Petroleum Engineers. . . . *Margaret L. Plunkett*, a member of the M.I.T. Industrial Relations Section in 1937-1940, is the new labor attaché to the Hague, Netherlands, for the U.S. Department of State, and the first woman to receive such accreditation.

Professor *F. Albert Cotton* of the Department of Chemistry was chosen to receive this year's Baekeland Award from the North Jersey Section of the American Chemical Society. . . . Professor *Jerrold R. Zacharias* of the Department of Physics has been elected to the board of trustees of Sarah Lawrence College. . . . Associate Professor *Douglas P. Adams* addressed the Boston IRE on "Countable-bit Nomographic-Electronic Computation" in January.

(Concluded on page 38)



LT. BROCK T. STROM, '61, was flanked in this Air Force photo by his All-American football trophy won at the Air Force Academy and a gyroscope. He is assistant chief of the Components Test Section of the Inertial Guidance Test Division at Holloman Air Force Base, New Mexico.

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Individuals Noteworthy (Concluded from page 36)

Two Doctor Warrens

BRUCE ALFRED WARREN has received the second Ph.D. degree awarded in physical oceanography by M.I.T.—after successfully defending his thesis orally last fall in the presence of both the Faculty of the Department of Geology and Geophysics and his father, Professor Bertram E. Warren, '23, of the Department of Physics.

The elder Dr. Warren received his doctorate from M.I.T. in 1929 and is an authority on the use of x-rays to study the atomic structure of metals and rocks. The young Dr. Warren received his doctorate for studies of the effect of irregularities in the ocean's floor on the Gulf Stream, and will continue such research at the Woods Hole Oceanographic Institution.

Speakers from M.I.T.

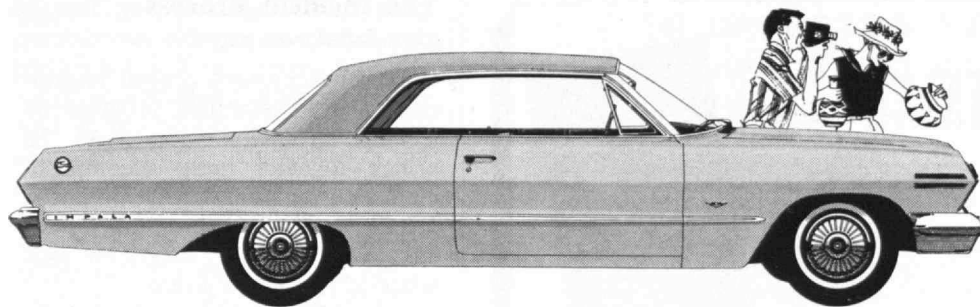
ROBERT L. COBLE, '55, Associate Professor of Ceramics, will discuss ceramics at a conference on materials sponsored by the Ilikon Corporation in Boston on February 1. . . . Professor Ithiel de Sola Pool will take part in a discussion of "Contributions of the Behavioral Scientist to Human Survival" at the American Orthopsychiatric Association's meeting on March 7.

Among the Literati

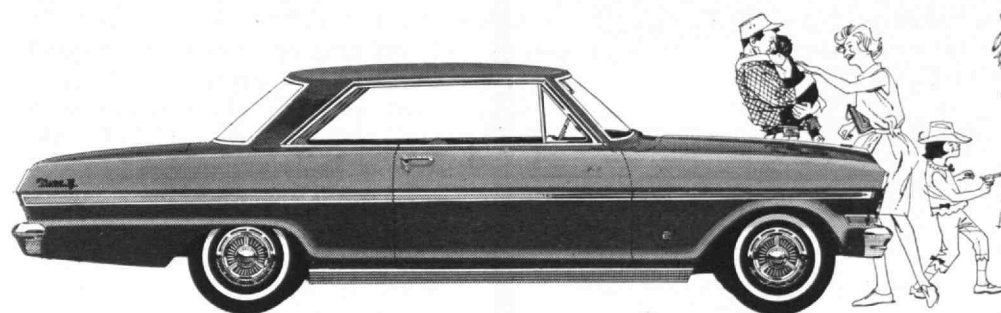
JEROME LETTVIN, '47, Associate Professor of Physiology at M.I.T., translated a dozen poems by Christian Morgenstern for the Fall-Winter 1962 issue of *The Fat Abbot*, a literary magazine, and noted that Morgenstern "holds the same place in German that Lewis Carroll does in English." *The Fat Abbot* is edited by Samuel Jay Keyser (278 Central Avenue, Needham Heights, Boston 94), the author of the article on page 15 of *The Review* this month.

Research Support

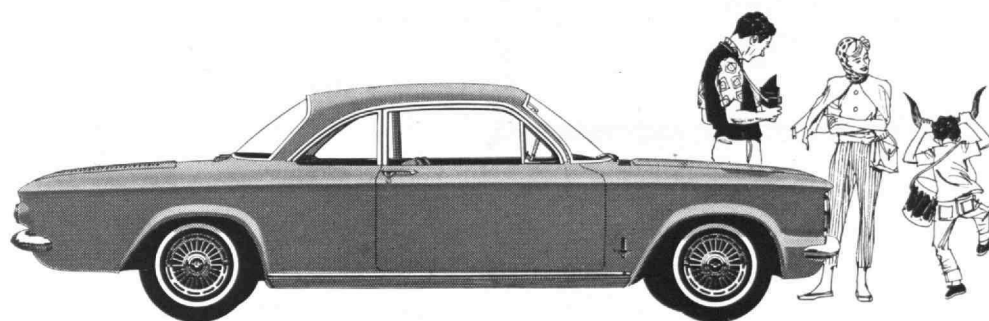
THE MEDICAL FOUNDATION, INC., of Boston has made a fellowship grant to support work of Peter T. Speakman, from the University of Leeds, at M.I.T. He is studying the collagen molecule under the direction of Institute Professor Francis O. Schmitt in the School of Advanced Study.



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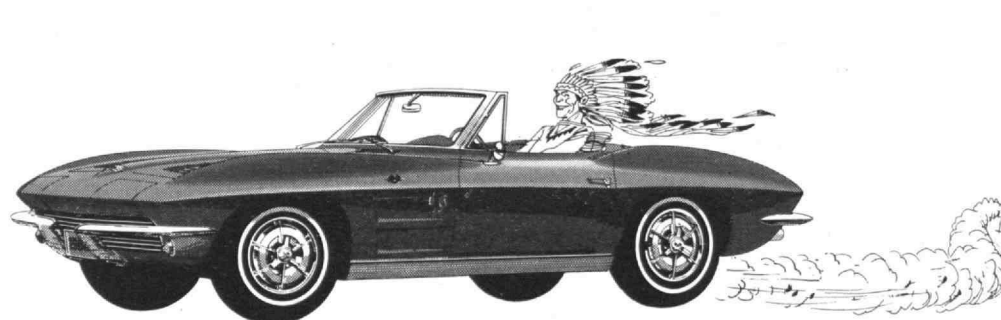
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The Incident Process

(Concluded from page 29)

Observer-Reporter's central responsibility is to stimulate progress by feeding group memory. As he brings together past accomplishments, current standards, and hopes for the future in a progress report, he also speaks for long-term purposes of the whole group.

Other managerial skills can be practiced during case discussions as group members work together. They learn to bring out information rapidly but thoroughly, carefully differentiating opinions from verifiable facts. They sharpen their ability to think incisively (by defining issues for action) and decisively (by making realistic and clear-cut decisions). Some participants show capacity to think at the level of policy (discerning and applying general ideas in the context of specific facts). All members may learn something and teach something from everything their minds come to grips with during case discussion and stocktaking meetings.

Special Meetings

What actually is done often falls short of the leader's estimate of what might be done. But the level of achievement can be raised, in a study group, by what is said and done at special meetings during which participants focus on *the case of the study group itself*. And the success of these stocktaking and planning meetings depends in part on the willingness and ability of some member (or members) to exercise the management functions of planning, organizing, and directing.

At best, all group members share in these leading functions—before and during each of the special meetings. For example, subcommittees can study reports on previous discussion meetings to select and correlate valuable case material. This material then forms part of the plan for a meeting whose primary purpose is *forward planning*. And whoever leads discussion at the planning meeting is responsible for directing, co-ordinating, and controlling group activity as the meeting proceeds. How effectively can he organize resources—both human and material? How alert is he to pick up and follow useful leads from participants? Such departures from a prepared plan entail risks,

as well as advantages. Perhaps a spontaneous suggestion from one participant will not prove interesting or acceptable to other members. And if the group does follow the new lead will the gain outweigh the loss?

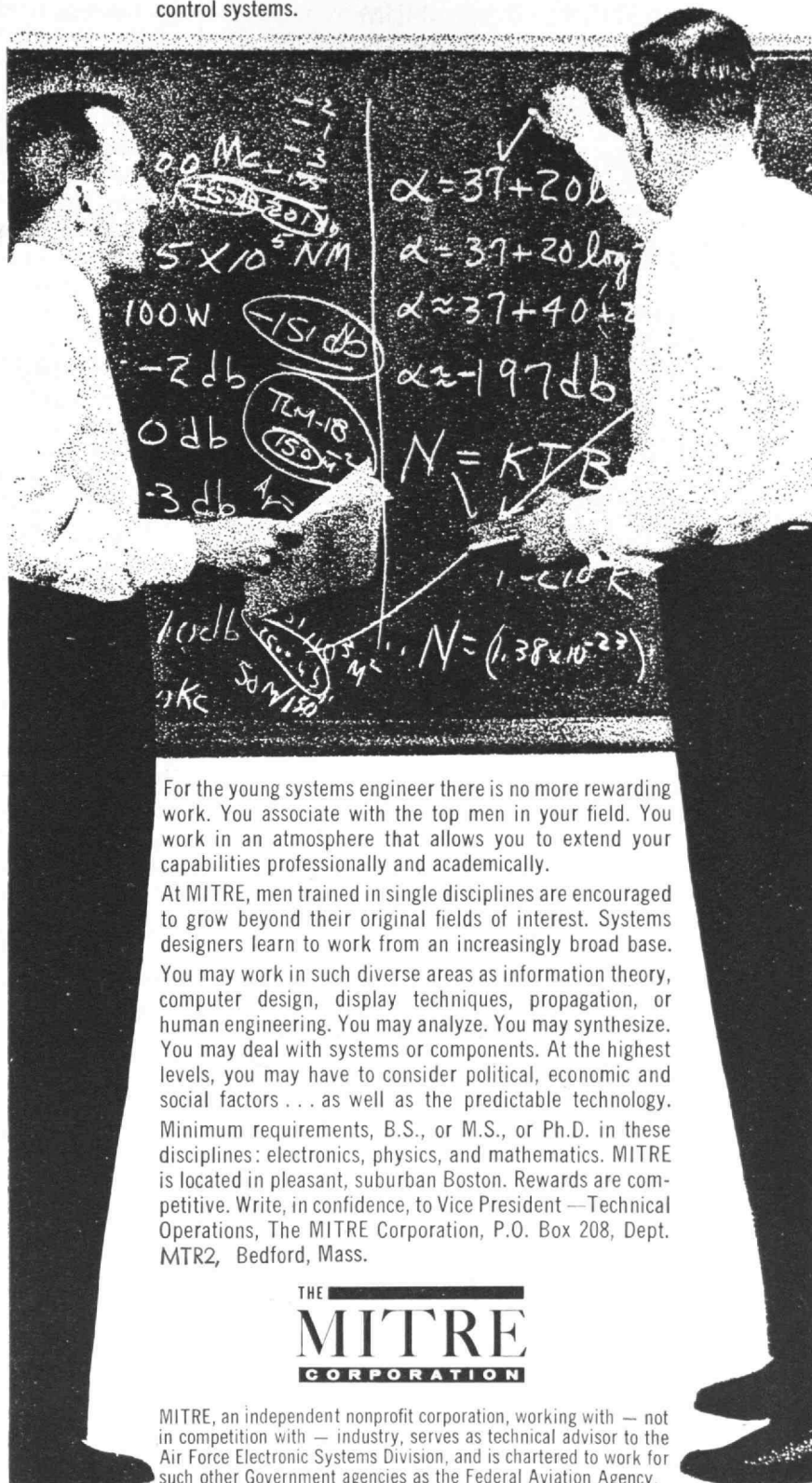
From suggestions made at planning meetings many improvements of the Incident Process have developed. This continuing modification of the work method may account for ready acceptance of the Incident Process by people in such different kinds of organization as industrial enterprises, hospitals, government agencies, and the armed services. Moreover, the provision for flexibility has made this variant of case method useful in Europe and Asia as well as in our own hemisphere. For example, in Japan, where management people are accustomed to making decisions jointly (the Ringi System), members in one seminar decided to extend the subcommittee function. They also used it to prepare summaries of factual information.

Many of the changes initiated by participants have made the work more demanding as well as more rewarding. But since these changes were suggested by group members, instead of being imposed on them, progress toward more productive ways of working together was not impeded by the resistance to change which must ordinarily be reckoned with in many work groups. If any member feels doubtful about a proposed change, free discussion usually reconciles differences.

Does this brief description adequately picture the what and why of the Incident Process? Certainly not. A much more complete account is given in our book, *Case Method in Human Relations: The Incident Process* (McGraw-Hill Book Company, 1961). But if you really want to find out whether the Incident Process could be useful to you, get together about 10 people in your organization and try it out. At the least, even in one session, you can have a good time. If you keep it up (at a few weekly meetings) you can have a profitable experience. You will be thinking and talking with other people in ways which help to make differences of opinion, and diversity of background and experience, productive forces in your organization.

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Trend of Affairs

(Continued from page 14)

The Science Teaching Center's Work

PROFESSOR Nathaniel H. Frank, '23, reported at this winter's meeting of the American Association for the Advancement of Science, on the philosophy of the M.I.T. Science Teaching Center. Its program, he said, is based on the fundamental concepts that:

- ❑ Any really significant change in college-level physics teaching must be closely geared to the new physics of the Twentieth Century.
- ❑ Research into modernization of college physics teaching must have the same large scale, dynamic quality and intensity as the most advanced research into contemporary physics itself.
- ❑ Any significant change in the structure of teaching college physics must break entirely from classical or traditional forms.

Professor Frank noted that modern physics—based on the central themes of quantum physics, relativity and modern statistical physics—has changed the significance of whole areas of classical physics. Nevertheless, in college physics courses (particularly for freshmen and sophomores) there has been a tendency simply to add modern concepts to the established classical body of knowledge. A new approach must be evolved, he said, that uses as its core the picture of the physical world that modern physics has drawn.

Professor Frank said members of the M.I.T. Center view physics teaching research with a sense of urgency. The modern revolution in physics can be expected to affect society as the Newtonian revolution did in its day. Any lag between modern physics research and the widest possible dissemination of the knowledge growing out of that research can only have adverse effects.

Heavy emphasis is being placed in this Center on giving students a thorough, clear understanding of the experimental evidence on which modern physics rests. Much of its work at this stage is focused on development of simple, inexpensive experiments that meet this objective. It also is recording demonstrations on film of experiments that of necessity are too expensive or complex to be taken into the student laboratory—such as experiments that show time dilation or the limiting speed of light.

The M.I.T. Center was established in 1960 under the directorship of the late Professor Francis L. Friedman, '49, and is now directed by Professor Jerrold R. Zacharias.

M.I.T. By-Lines

HARRY A. KULJIAN, '19, of Philadelphia, contributed the article entitled "Natural Law Holds the Key to World Peace" to the October, 1962, issue of *Consulting Engineer*. . . . Professor Huston Smith of M.I.T.'s remarks on "Twenty Years of the Atom" at the University of Chicago on the anniversary of the first controlled release of nuclear energy appeared in the December 15, 1962, issue of *The Nation*. . . . Professor William P. Allis, '23, wrote on "Development of Plasma Physics in the Last 10 Years," for the December, 1962, issue of *Physics Today*, and suggested a chronology of the contributions to it from 1733 to 1954.

(Continued on page 44)



and the prophet replied:

*"It is well to give when asked, but it is
better to give unasked, through understanding." **

Gifts by Will

TO THE

Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it better to give unasked, through understanding;
And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;
Therefore give now, that the season of giving may be yours and not your inheritors."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and protect his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plans for the future may go awry. Hence the prophet's importuning, "—give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, "it is well to give when asked, but it is better to give unasked, through understanding."

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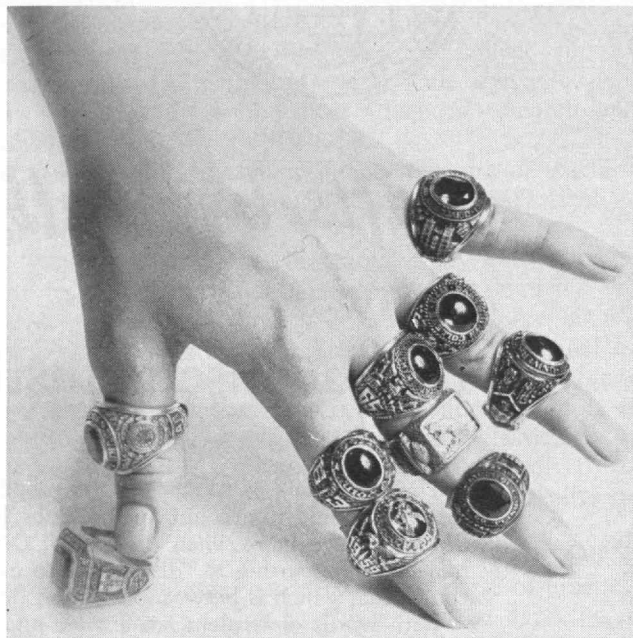
12-1/4

Trend of Affairs

(Continued from page 42)

The Glamor of M.I.T.

It is not probable that many M.I.T. Alumni are readers of *Seventeen*, a magazine for teen-age glamor girls, so it is unlikely that they saw a recent full-page advertisement in which a beaver ring adorned a well-manicured feminine hand—along with rings from Dartmouth, Cornell, and several other colleges. The ad heralded a



new perfume: "Prophecy." And if using an M.I.T. ring to sell perfume to subdebs seems incongruous, you can be sure that the admen knew that the girls would get the message: Use Prophecy and you'll snag a smart, sophisticated, beaver-type husband.

There have been other straws of this kind in the wind. A few years ago any playwright with a bright college boy in his cast would place him at Harvard, Yale, or Princeton, but sometimes nowadays he goes to M.I.T. A short story in a women's magazine recently described a Sir Galahad, and it turned out he was an M.I.T. student. Women who have married M.I.T. men will not find this surprising, of course, but it may be interesting news to some of The Review's readers.

Tiddlywink History

THE renaissance of tiddlywinks in New England schools this winter prompted Nelson Lees, '53, to delve into the game's origin. "Tiddlywink," he found was once British slang for an unlicensed public house, and "tiddlywinking" meant idling, droning, and cheating. The game was invented, Mr. Lees postulates, by loafers flipping coins into an empty beer glass.

Michael E. Platt, '63, captain of the MUTS (the M.I.T. Undergraduate Tiddlywink Society), admits that he thought the game was "kind of funny" at first, but now believes it really is a good game that may spread farther. "It is very social," he says. "It is often tension-packed, and to play well you really have to have the right touch."

(Concluded on page 47)

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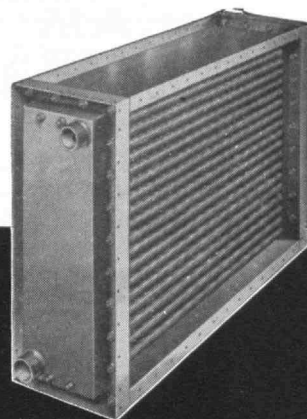
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Trend of Affairs

(Concluded from page 44)

Unparalleled Support of M.I.T.

NEW ENGLAND corporations, particularly those in Massachusetts, have demonstrated unprecedented support of M.I.T. by the magnitude of their response to the Second Century Fund campaign, Earl P. Stevenson, '19, Chairman of the Massachusetts Business and Industry Committee, reported last month. Of the more than \$18,000,000 contributed to the Fund by business and industry nationally, \$3,000,000 has come from New England firms. Contributions of \$2,600,000 from nearly 100 firms located in Massachusetts, Mr. Stevenson pointed out, represent nearly 15 per cent of corporate giving nationally, even though Massachusetts has only 3 per cent of the nation's employment.

"Such support by business and industry in this region is unparalleled in the 100-year history of M.I.T.," said James R. Killian, Jr., '26, Chairman of the M.I.T. Corporation. "There has been a clear recognition that M.I.T. has made a great contribution to the industrial strength of this area and that it can do still more, given the necessary resources.

"Without the unstinting devotion and effort Mr. Stevenson and members of the Massachusetts Business and Industry Committee have given to the Second Century Fund, this new and encouraging level of support from firms in this region could not have been achieved."

Contributions by Massachusetts firms to the SCF have set several new precedents, Dr. Killian continued. For one, a gift of \$500,000 to the Fund by The Gillette Company, of Boston, was the largest single gift ever made by a Massachusetts corporation to M.I.T. The diversity of business and industrial corporations represented by gifts was also unprecedented. Nearly \$200,000 has come from banking and financial corporations, many of which were making their first gift to M.I.T. Retail businesses, insurance companies, public utilities, and newspapers were also represented. In virtually all cases, furthermore, the corporate gifts were made without restriction as to use.

"These are the kinds of gifts to institutions of higher learning that must be encouraged," Dr. Killian said.

Noteworthy in M.I.T.'s drive to develop greater collaboration with New England industry was the establishment of the M.I.T. Associates Program, organized last year to provide corporate participants with an improved means of communication with the Institute. The Associates Program is part of an intensive Institute effort to broaden the base of corporate support and to enhance the opportunities for the Institute to contribute to industry. Another means through which the Institute maintains close collaboration with industry is the M.I.T. Industrial Liaison Program, whose 120 members represent a national distribution of companies, including some 20 Massachusetts corporations.

"From its beginning, M.I.T.'s resources have contributed greatly to the development of our industrial strength," Mr. Stevenson said. "The growth of virtually every technically based industry in the region has been quickened by research done at M.I.T. or by its graduates serving in industrial research, engineering and management."

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Club News

New York Alumni Present Silver Stein Award

This year's Silver Stein Award was presented on January 24 to Irving D. Jakobson, '21, for his many years of loyal service to M.I.T. and the M.I.T. Club of New York, and further details will be reported later.

Robert W. Morgan, '55, was appointed acting assistant treasurer to fill in for the club's treasurer and assistant treasurer who were away from New York in 1962.

Donald P. Severance, '38, Executive Vice-president of the M.I.T. Alumni Association, told our officers at their meeting last fall that M.I.T.'s Educational Council has been rated one of the best in the country. He also pointed out that the Institute has been one of the top 10 colleges and universities in alumni response (number of donors) to fund raising in the past decade.

Recently seen in the club's dining room were Gregory Dexter, '08, Jim Campbell, '11, and Philip Sadtler, '06, who have been meeting for lunch each month regularly at the Club. Monthly class luncheons are being continued under the direction of George H. Ropes, '33, who succeeds Robert E. Murphy, '28.

We regret the passing, late in 1962, of William C. Arkell, '10, a Director and also Chairman of the Executive Committee of Beech-Nut Life Savers, Inc., the company he joined immediately after graduation; and also the passing late last year of Louis H. Skidmore, '23, a founder of the architectural firm of Skidmore, Owings and Merrill. We are pleased to report the appointment of Hans P. Eichenger, '51, to Director of Research for general line products, Ingersoll-Rand.

New York Club activities for 1963 will include an annual Beer Party in February, and a joint New York-Long Island meeting in New York City.—James M. Margolis, '52, Chairman of Publications; Frank P. Brunetta, '49, Secretary, 1 Old Oak Court, Syosset, Long Island, N. Y.

Professor Greeley Speaks To New Mexico Club

The M.I.T. Club of New Mexico held its fall dinner meeting on November 26 at the Officers' Club, Sandia Base, Albuquerque. The guest of honor was Professor Roland B. Greeley, M.I.T. Director of Admissions, who had spent the day with various student groups at local high schools.

The club still reserves a luncheon table at the Coronado Club on Sandia Base for an informal mid-day get-together on the second Thursday of each month. Alumni who are in Albuquerque on that day are invited to join us. No prior notice is necessary.—Thomas J. Raftery, '31, Secretary, 1505 Valencia Dr., N.E., Albuquerque, N.M.

New Jersey Club Topic Is European Common Market

The M.I.T. Club of Northern New Jersey heard Charles P. Kindleberger, Professor of Economics at M.I.T., speak on the "European Common Market and the U.S. Foreign Trade Policy," this winter.

Professor Kindleberger discussed this timely subject, taking into consideration the internal perturbations of politics, economics, and military programs of each member and potential member country. He sparked his presentation with some classical, but expertly selected, metaphors and followed it with a question period. Attending were his brother-in-law and sister, Mr. and Mrs. Stone of Bernardsville, N.J.

The spring meeting will be on Wednesday, March 13, at the Hotel Suburban, East Orange, N. J. Efforts are being made to obtain a speaker from the National Aeronautics and Space Administration. All members of the M.I.T. family who may be visiting in the area are invited to attend.—Carlo N. De Gennaro, '53, Secretary, 905 Hudson St., Hoboken, N. J.

Connecticut Valley Group Learns About New Plastics

Howard Greenwell of the Monsanto Chemical Company described the "Plastics Home of the Future" to members of the M.I.T. Club of the Connecticut Valley on October 23 at a buffet dinner. He said the design for this futuristic structure of plastic grew out of four years of joint study by Monsanto and a group from M.I.T. The growing applications of plastics in the building industry are explored in a full-size model of the house at Disneyland. The presentation included a film followed by a question period.

New officers for 1962-1963 are Robert F. Mahar, '49, President; Charles S. Parker, '39, and Joseph A. Nowak, Jr., '47, Vice-presidents; Lloyd Gilson, '55, Secretary; and Robert L. Tessier, '53, Treasurer. Newcomers to the area not on the mailing list are urged to contact the secretary for future meeting information.—Lloyd Gilson, '55, Secretary, 132 Chalmers Street, Springfield, Mass.

New Haven M.I.T. Club Hears Professor Goldblith

The M.I.T. Club of New Haven met on November 29 at the Colonial House in Hamden, Conn. Twenty members and guests gathered for dinner and to hear Samuel A. Goldblith, Professor of Food Science at M.I.T., explain "New Developments in Food Science and Technology." After his talk, Professor Goldblith distributed samples of shrimp and crab meat, the color and flavor of which had been successfully preserved by freeze-drying.

D. Hugh Darden, Director of the M.I.T. Educational Council and Associate Director of Admissions, spoke briefly on the role of Alumni in encouraging continued academic excellence at M.I.T. and mentioned some possible local activities to further this end.—Joseph A. Clumpner, '55, Secretary, Francis Drive, Bethany 15, Conn.

Central Pennsylvania Club Hears Statistical Analyst

Richard W. Willard, '51, M.I.T. Admissions Office Statistical Analyst, visited the Central Pennsylvania area on November 26 and 27 to contact Harrisburg-York area high schools. He was accompanied to the schools by members of the M.I.T. Club of Central Pennsylvania. Robert K. Peterson, '48, and Marshall Holcombe, '36, went to the Cedar Cliff, Bishop-McDevitt, and William Penn High Schools near Harrisburg, and Karl Katz, '50, to the William Penn, Central High, and Suburban Junior-Senior High Schools in York.

The club had its fall get-together on November 30 with a cocktail party at Marshall Holcombe's home, followed by dinner at the Maverick Steak House, and a play "Stalag 17," at the Harrisburg Community Theatre. Attending were C. W. Richards, '21; John Connelly, '28; Marshall Holcombe, '36; Robert Smith, '41; Theodore L. Thomas, '47; Robert K. Peterson, '48; Karl Katz, '50; James H. Whitley, '54; and Leo Hood, '57; and their wives.

Weston W. Goodnow, '46, formerly of York, now resides at 416 Chester Avenue, Moorestown, N.Y.; and Melvin B. Ellis, '33, formerly associated with the Capitol Kirby Company in Harrisburg, is now at the Ellis Distributing Corporation, 6309 Georgia Avenue, N.W., Washington 11, D.C.

We have learned of the sudden death of Francis E. Thomas, '17, on November 10. All of us who knew Francis and his devotion to the Educational Council and the local M.I.T. Club are saddened by this news.—Robert K. Peterson, '48, Secretary-Treasurer, 566 Brentwater Road, Camp Hill, Pa.

Kansas City Alumni Observe Engineer's Week

The M.I.T. Club of Kansas City will participate in the annual local observance of Engineers' Week, February 17-23. It is sponsored by the National Society of Professional Engineers. The club has held joint meetings with the Western Chapter, Missouri S.P.E., on several occasions, with such speakers as Professors Rolf Eliassen, '32, and Paul O. Roberts, '57. This year's observance will be in co-operation with the Kansas City Chamber of Commerce. If schedules permit, C. Stark Draper, '26, Head of M.I.T.'s Department of Aeronautics and Astronautics, will be our mutual guest.

Twenty-two Alumni and their wives enjoyed cocktails and dinner on November 27 at the Harvey House. Even more delightful was the informal presentation made by our own Richard Muther, '38. Dick is executive director of Richard Muther and Associates, a firm internationally prominent in plant layout, supervisory training, and management.

The annual Student-Alumni Luncheon was held on December 29. Several students from this area now attending the Institute were guests.—B. J. Kirkwood, '49, Secretary, 4308 West 79th Street, Prairie Village, Kansas.

Class News

'95

In our "Eighty-Plus Club" December bulletin, we enclosed a reply postal for checking our 1963 address file. If you have not mailed your card, please do so, as our file is not complete. . . . Our **Luther Conant, IX**, formerly of 46 Shepard Street in Cambridge, is now with his son, Luther, Jr., at 33 Old Hill Road, Westport, Conn. . . . Because no applications were made for 1895's \$25,000 scholarship fund, the interest has increased it to nearly twice its value, and it is now being used for loans to M.I.T. students and repaid by them to the M.I.T. Loan Fund account. So our '95 fund has value. Many years ago, when '95 started the fund as scholarship help for those who needed it to attend M.I.T., it was the custom for a student not to apply for a scholarship if he or his family could afford to send him, so as not to deprive others of an M.I.T. education.—**Andrew D. Fuller**, Assistant Secretary, 120 Tremont Street, Boston, Mass.

'96

On December 15 Seasons Greetings were addressed to 38 classmates. Mrs. **Rockwell** sent a card from Florida to the secretary "wishing all the joys of Christmas," which I extend for her, and to all of the Class of '96, to which **John** was so devoted. From Canandaigua, N.Y., **Guy Morrill** sent a card with this message, "I wish that you and I and all men everywhere might recognize at this Christmas-time that we too are on a mission, and say each one for himself, I too like my Lord 'am come not to be ministered unto'—not to get, to have, and keep—'but to minister and to give my life.'" . . . It poured rain Thanksgiving Day in Plymouth as the last of the 234,000 seasonal visitors boarded the Mayflower II, which has since been towed to a winter berth in Boston. Today there is a skimming of ice on the harbor.—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.; **Henry R. Hedge**, Assistant Secretary, 105 Rockwood Street, Brookline, Mass.

'98

As our secretary and class agent, **Ed Chapin**, was prevented because of a slight temporary illness, from attending the Fourth Alumni Officers' Conference last September at the Institute, his Assistant Secretary **Fred Jones** took over. The purpose of these conferences is, of

course, to further the activities and interest of the Alumni Association and its various clubs. The Alumni Fund sponsors such activities as student aid and scholarships. Professor Greeley, Director of Admissions, spoke interestingly of the strict requirements for admission to M.I.T. He stated that of about 5,400 applicants for the recent class, only about 900 or 17 per cent, were accepted. Admission is mainly based on (1) scholastic rating, (2) personality, and (3) ability to contribute to campus life. Dean Pitre, Director of Student Aid, brought out that the actual annual cost to the Institute per student is approximately \$3,600 and that the tuition fee pays less than one half of this. This is where the Alumni come in with student aid, scholarships, etc. In addition there is aid through gifts.—**Fred-eric A. Jones**, Assistant Secretary, 286 Chestnut Hill Avenue, Brighton 35, Mass.; **Edward S. Chapin**, Secretary, 271 Dartmouth Street, Boston 16, Mass.

'00

We have received word from the Alumni Office of the death of **Herman R. Hunt, XIII**. Date unknown. After graduation in 1900 he was a ship draftsman in New York City and Seattle for about six years. From 1907 to 1910 he was instructor in Naval Architecture at M.I.T. Later on he was reported as being an instructor at the Portsmouth Navy Yard. By 1948 he resided in Maryland, where he later retired and has since lived. We have had no word of him for many years. If any classmate can give us information for a more complete biography it will be greatly appreciated. He came to M.I.T. from New Bedford and was a second lieutenant in our Freshman Battalion. . . . The Alumni Register also reports the death of Mrs. **Clarence W. Hughes** (nee Harriet M. Noyes), VIII.—**Elbert G. Allen**, Secretary, 11 Richfield Road, West Newton 65, Mass.

'04

The Alumni Office supplies the only news this month, as follows: **Philip Wadsworth, IV**, of Oyster Bay, N.Y., died in November 1961 and **Charles Campbell, XI**, of Pittsburgh, Pa., died May 25, 1962.—**Carle R. Hayward**, Secretary, Room 35-304, M.I.T., Cambridge 39, Mass.; **Eugene H. Russell, Jr.**, Treasurer, 82 Devonshire Street, Boston, Mass.

'06

In starting the January notes I mentioned the "winter wonderland" hereabouts on that November morning, so I might mention here the "deep freeze" the Deep South is coping with this mid-December morning—colder in some places in Florida than here in Wellesley, where the lawns are still quite green. Seems silly to say anything about Christ-

Sloan Fellows

A letter from Maury Young brought the sad news of the death of **John French, '52**, General Manager, Mill Operations, Continental Can Company of Canada. John had apparently recovered from his earlier heart attack and was working full time. He had taken his son, Richard, to a football game in a northern state and in the course of this little holiday passed away in his sleep. . . . We have two changes of assignment: **Fred-erick A. Roessle, '60**, has been appointed assistant vice-president of the Singer Manufacturing Company in charge of three Singer subsidiaries: Singer-Fidelity, Inc., of Philadelphia, manufacturer of hosiery machines; Singer-Cobble, Inc. of Chattanooga, manufacturer of tufting machines; and Singer-Supreme Company, Inc., of Ozone Park, N.Y., producer of knitting machinery. . . . **Elmer N. Lenk, '61**, is now assistant purchasing agent of Western Electric Company in New York City. . . . We also have two changes of locale: **Alfred E. Fernald, '55**, is once more in the Boston area. **Theodore G. Macklin, '60**, is now at Newport Beach, Calif. Named in the news of promotions, elections, and appointments recently were these members of the Program for Senior Executives: **Lyle E. Schaffer**, Fall '59, as Purchasing Agent, Pan American Petroleum Corporation. . . . **Richard D. Spence**, Fall '62, as Assistant General Manager, Southern Pacific Company, and **J. Herschel Barnes**, Spring '62, as Vice-President for Personnel, American Electric Power Service Corporation.—**Peter P. Gil**, Secretary, Room 1-281, M.I.T., Cambridge 39, Mass.

mas, when you will read this in February, but thanks a lot for the cards and messages anyway. Having had no letters recently, the only news items for you are address changes: **Ralph Sargent, X**, is now at 8201 16th Street, Silver Spring, Md.; **Walter Hopkins, III**, is at the Huntington-Sheraton in Pasadena; **Ralph Dyer, XIII**, has perhaps retired as he has switched from a business address to 900 University Street, Seattle 1; **Cy Young, VI**, left Savage, Minn., in November, I hope, for his winter sojourn at Pompano Beach, Box 3031. . . . **Burton** and **Marie Kendall** expected to be at Lake Wales and Mt. Dora in January and February.

A death notice not previously reported is that of **Frederick Bertine Guest, XIII**, on September 26, 1962, in the hospital at Hanover, N.H. He was with us until senior year, his home address being New Rochelle, N.Y. Until 1940 that continued to be his address, then for 15 years it was Tuckahoe. The only clue at hand to his business activities is a Norwalk, Conn., address in 1955, when he was with Nuroco (?) Woodwork, Inc. He was retired and living in Newfane, Vt., by 1960, and I have written to a C. E. Goss there

for further information, but have had no reply to date. Being a member of the Chi Phi fraternity freshman year, he was evidently a graduate of, or had attended, some other college or university. Lo and behold, in the mail this afternoon as I started typing these notes, came a long letter from the Mr. Goss to whom I had written. However I will reserve further details until I have corresponded with Mrs. Guest, who survives him, also a son, George A. of Weston, Conn., and three grandchildren.—**Edward B. Rowe**, Secretary, Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

Stan Wires has sent me a brochure made up of the five articles that appeared under his name in the New England Architect and Builder during 1960, entitled "Decorative Tiles." It is a very attractive booklet. It will be filed under Stan's name in the history of the Class of 1907. Most of you will recall that Stan was a director and vice-president of the Tile and Mantel Contractors' Association of America and past chairman of the Tile Industry Research Bureau. Any of the class members visiting in Washington, D.C., should go to the Smithsonian Institute and view the large collection of decorative tiles that our classmate presented to that National Museum. . . . **M. E. MacGregor** reminded me that I had inadvertently omitted from the November notes that he had been one of the "young" golf players at our reunion last June at the Oyster Harbors Club. Milt has two 1907 Techniques, number 18 and number 20, signed by President Henry S. Prichett which he would like to dispose of. Anyone interested, please write to M.E. directly. . . . Bowling is a fine sport to keep a person in good physical condition; and to prove this, M.E. is captain of one team and also bowls on a second team in the Brewster area.

Several obituary notices sent to me record the death of **Horace S. Holt** who was associated with our class for several years. I knew him very intimately in our freshman year but until quite recently had lost all contact with him. Horace was employed for many years by the New England Telephone Company of Springfield, Mass. In 1927 he was employed by the International Telephone Company, and worked in Czechoslovakia and Rumania for eight years. He was decorated by King Carol of Rumania for his work in that country. Horace retired in 1941 and moved to Columbia, Conn. There he served as state representative, was Republican town chairman for many years and also served on the Board of Tax Review. Horace died on October 15, 1962, at the age of 77. The funeral was held in Willimantic, Conn., and the burial was in Springfield, Mass. There was no information of any kind in the secretary's files about Horace.

In the November Review, mention was made of the death of Mrs. **Hartt**, '07, (nee?) I do not find in the secretary's records any record of her being con-

nected with the Class of 1907. I wonder if any of the class members can give me any further information. . . . Your secretary has had some interesting correspondence from **Ernest Altgelt**, of San Antonio, Texas, together with pictures and a reply sheet with data for his page of the class history. Some of the men will recall that Ernest came to our 42d Reunion in 1949, at which time he related many interesting experiences of his life as an engineer in Texas and also as a cattle raiser. . . . He attended Texas A & M College, 1900-1904, and earned his B.S. in civil engineering. Then he went to the University of Texas, 1904-1905, and was granted the degree of Civil Engineer. He spent 1905-1906 at M.I.T. and has been always listed with 1907. Ernest especially recalls his friendship with Lawrence Allen, Charlie Allen, Bob Albro, and Willis G. Waldo, all of '07. He has not retired and is still active as a consulting engineer on surface and ground water, irrigation and mining. If any of the class members care to write to him, I am sure you would find him an interesting correspondent.—**Philip B. Walker**, Secretary-Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

How about the 1963 Alumni Fund? To those who have already given, our thanks. To the others, please do, and soon. The Class of '08 has always done well in the past. Let's keep it up! . . . In June, '08 will celebrate our 55th. The reunion will be held at the Melrose Inn, Harwichport, Mass., on Cape Cod, June 7-9. Headquarters will be at the Beach House, as in the past. This will be our seventh visit with the Smiths. June is nice on the Cape, so why not plan to be with us for a most enjoyable weekend? Ladies are invited. . . . Alumni Day at Cambridge is on Monday, June 10. . . . We are sorry to report the death of **Viggo E. Bird**, at his home in Vesterskov Glumso, Denmark.—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass., **Joseph W. Wattles**, Treasurer, 26 Bullard Road, Weston 93, Mass.

'09

In the January Review we told of the committee which **Molly** has appointed to develop plans for our 55th Reunion. The name of **George Wallis, II**, should be added to the committee. We have already studied the brochures of several local hostelrys which have been recommended or called to our attention. One of these was the Lexington Motel Inn on Route 128. On Sunday, November 25, the following met there for dinner and a meeting: John and Margaret Davis, Chet and Muriel Dawes, Francis Loud, Madge and Henry Spencer, and Art and Betty Shaw. After inspecting the inn a committee meeting was held at which it was

Happy Birthday

We extend our congratulations to 5 Alumni who will celebrate their 90th birthdays in February and to 2 and 7 Alumni who will celebrate, respectively, their 85th and 80th birthdays this month, as listed below with dates of birth:

February, 1873—**RICHARD O. ELLIOT**, '96, on the 6th; **JOSEPH H. KIMBALL**, '94, on the 9th; **WILLIAM H. KIMBALL**, '99, and **EDWARD I. MARVELL**, '94, on the 22nd; and **JAMES PURDON**, '98, on the 27th;

February, 1878—**FREDERICK K. LORD**, '03, on the 5th; and **HERMAN R. HUNT**, '00, on the 26th;

February, 1883—**MELVIN H. SCHWARTZ**, '04, on the 1st; **BERNARD BLUM**, '04, on the 12th; **ARTHUR N. HASTINGS**, '05, on the 13th; **RALPH D. EMERSON**, '05, on the 24th; **ARTHUR E. RUSSELL**, '05, on the 25th; **CURRIER LANG**, '04, on the 26th; and **HERBERT E. FOWLER**, '10, on the 27th.

voted to send a circular letter to the members of the class sometime after the first of the year making a tentative report and enclosing a return postcard asking preference as to the meeting place, whether it should be within a short distance of the Institute or at a greater distance such as the Cape. After the meeting everyone visited the Charter House in Waltham, three or four miles away, also on Route 128, where the Class of 1910 held its 50th reunion. We were able to consult a few members of the class who all reported that they were most pleased with the facilities and services. We also were very favorably impressed. We will keep the class informed of any new developments.

Art Shaw, I, received the following note from Betty Wilson, the wife of "**Tug**" **Wilson**, Art's thesis mate: "Tug is in a nursing home and I know he would want you to know and partly explain why he hasn't participated in the M.I.T. Alumni Fund. It is awfully hard to reconcile myself to what has happened, but Tug is happy and having wonderful care." Art has written to Mrs. Wilson and the secretary has also written expressing the sympathy of the class and is having a copy of this Review sent to her. . . . We have received a clipping from the *Saugus, Mass., Advertiser* stating that "This I Saw in China" was to be presented at the Community Forum and that **Florence Luscomb, IV**, was to be the speaker. She was to show slides taken in Communist China during an 11-day visit last summer and was also to comment on her observations. This past summer she was a delegate to peace conferences in both Moscow and Japan. Florence has lost none of the energy of her student days, and she surely gets around to see the world.

We have received from the Alumni Office a notice of the death of **Karl D. Godfrey, VI**. Karl prepared for the Institute at Phillips Exeter Academy and at the Institute was a member of the Exeter Club, Electrical Engineering Society, Technique Electoral Committee, the Varsity Relay Team, and the Board of

Directors of the class. We knew Karl intimately, not only as a member of our Course VI but also as a halfback on the football team in both his freshman and sophomore years; he was captain in his sophomore year. At Exeter he was a star runner on the track team and his ability as a runner served him well on the football team for he was outstanding as an elusive broken-field runner and most difficult to tackle. The forward pass first became legal in our freshman year and Karl's ability either to pass or run on option plays added much to the scoring of the team. Most of his life he was employed by the Underground Division of the Boston Edison Company and your secretary met him at times when he did consulting for the company. We who knew Karl greatly regret his passing.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis**, Wenham, Mass.; **Francis M. Loud**, 351 Commercial Street, Weymouth 88, Mass.

'10

I received the following letter from **Otto Rietschlin's** daughter that tells us of Otto's happy years of retirement: "He had been in good health up to six weeks prior to his death and, after 10 days in the hospital for a checkup and biopsy, was up and around to the very last. . . . We had been here in Florida for just under five years and, during that period of retirement, he was able to enjoy the home he had built and to indulge in his favorite pastime, gardening. He was able to do the things he wished, if and when he chose to do them, a reward he certainly deserved after years of hard work from early youth. His shrubs and flowers were his pride and joy and he has left many lovely ones behind. I only hope that I don't kill them through ignorance for I have yet to develop a green thumb. Dad had a tremendous amount of energy and always enjoyed working with his hands, so occupied himself during the brief cool spells by building a brick patio and concrete bird bath in the garden as well as a concrete block enclosure at the back door. There always had to be some little chore at which he could putter.

"He was an ardent music lover and, two years ago, finally purchased a lovely hi-fi, something of which he had long dreamed, and from which he gained many hours of happiness and enjoyment. At seventy-six, he was as keen and alert mentally as he had been in his younger days, and that was considerable, for he was blessed with a brilliant, capable mind. Only his hearing was failing him a bit but he had, for years, been deaf in one ear. Mother and I are getting along as best we can without him, though we miss him terribly. We were always so close, but our one great consolation is that he had no prolonged illness or suffering."

In the notes of the December issue of

The Review I noted how difficult it has become to have information regarding our classmates. **Ken Armstrong** took my hint and writes as follows: "Noting your plea in The Review for more 1910 news, I respond by bringing my letter of May 15, 1958 (printed in the December 1958 issue), up to date. I am still somewhat active in civic affairs but no longer hold any official position. I have cut down on my other activities, but still attend meetings in the Opa-locka Masonic Temple across the street from my house, particularly those of the youth organizations. Two years ago I was awarded the honorary Legion of Honor by the Order of DeMolay for boys and the Grand Cross of Color by the Order of the Rainbow for Girls. Last year my first great-grandchild arrived. I now have two sons, three grandsons, one of whom is married and the father of my great-granddaughter, and four granddaughters, one of whom is married. This figures out to Christmas presents for 14. My younger son lives just outside of Washington, D.C. He has three children, all sub-teens. The rest of my descendants live around here, except one grandson who is stationed at Grand Forks, N.D., Air Force Base.

"I recently attended the 12th annual state conference of the Florida Planning and Zoning Association at the Everglades Hotel, Miami. Three M.I.T. men addressed the sessions. Morris Lipp, '20, spoke on community planning and zoning from the engineers' standpoint; Malcolm Little, '47, on the subject of training for the planning profession, and Elbert Baril, '34, presided at one of the sessions. Morris Lipp is a graduate in Course I. He was for many years city engineer and city manager of Miami Beach. Professor Malcolm Little has a degree of

master of city planning from M.I.T., and is now an associate professor at the Georgia Institute of Technology; Elbert Baril is urban renewal developer for the City of Miami. He attended M.I.T. about a year, but received his degrees elsewhere."—**Herbert S. Cleverdon**, Secretary, 120 Tremont Street, Boston, Mass.

'11

Retired Rear Admiral **Luis de Florez**, 73, died December 5, 1962, at Lawrence Memorial Hospital, New London, Conn. He was stricken November 30 at Fisher Island, N. Y., Airport. Interment was at the Arlington National Cemetery, with full military honors. He started his career in naval aviation during World War I as a civilian employee of what later became the Bureau of Aeronautics. He introduced the use of instruments in planes, and the installation of safety belts, and altogether is credited with the invention of some 30 aviation devices. During World War I he organized the Navy Department's Division of Aircraft Instruments and Accessories. After the war, he returned to civilian work as a chemical engineer. Foreseeing U.S. entry into World War II, he volunteered in 1939 for active service as an aviator. Then 50 years old, he completed the Navy's one-year aviation refresher course in six weeks. He introduced the use of synthetic devices to simulate conditions of actual flying, thus helping the Navy train its World War II pilots in record time. The revolutionary training program which he developed won for him the Collier Trophy for contribution to aviation in 1943. He retired from active service in 1946. Survivors include his wife Marian, son Peter, '38, two brothers and a

Deceased

GODFREY L. CABOT, '81, Nov. 2
BERTRAM H. DAVIS, '90, Dec. 17
MRS. LOUIS POUTASSE, '98, Feb. 6, 1962
MRS. W. HOLWAY HILL, '99, Aug.
MRS. CLARENCE W. HUGHES, '00
FREDERIC C. AYERS, '01, April 24
EDWARD P. FLEMING, '01, April 23
GRACE MACLEOD, '01, Nov. 16
HEWITT CROSBY, '03, Sept. 21
CHARLES CAMPBELL, '04, May 25*
PHILIP WADSWORTH, '04, Nov., 1961*
WILLIAM H. CROWELL, '05
JAMES M. LAMBIE, '05
FREDERICK B. GUEST, '06, Sept. 26*
HORACE S. HOLT, '07, Oct. 15*
B. KARL SHARP, '07
VIGGO E. BIRD, '08*
KARL D. GODFREY, '09, May 18*
LUIS DE FLOREZ, '11, Dec. 5
HOWARD P. IRELAND, '11, Aug. 10
FRANK F. RUPERT, '11, Oct. 17*
RUBEN CASTRO-BEECHE, '12*
WALTER F. O'BRIEN, '12*
GEORGE W. RAPELLI-OLIVER, '12*
WILLIAM GUILD, '13, Nov. 20
MORRIS F. HALL, '13, Nov. 14
ALFRED L. HIGGINS, '13, Nov. 7
FRED D. MURDOCK, '13
THOMAS R. REYBURN, '13
JAMES G. RUSSELL, '13, Dec. 15
R. LORING HAYWARD, '15, Nov. 10*

C. WEARE HOWLETT, '15, Dec. 12
EDWARD F. WALDRON, '15, May 18*
HARVEY W. JACKSON, '16, March
JOHN S. ELLITHORP, JR., '17, Nov. 27
HERBERT GREENEWALD, '17, Oct. 12*
FRANCIS E. THOMAS, '17, Nov. 10
NATHANIEL A. REINHERTZ, '18, July
ELWOOD M. MANTER, '18, June 20
ARTHUR S. LITTLEFIELD, '20, Sept. 4
FRANCIS P. SAMMET, '22, June 26
PAUL C. WASHBURN, '22, Oct. 28
WILLIAM G. MANLEY, '23, Oct. 25*
DEWEY F. HAND, '26, Sept. 9
FELIX BARDACH, '27, Feb. 9, 1962
DAVID R. BARNETT, '27, Dec. 14, 1961*
HOMER B. HUNTOON, '28, May 8*
HUGH CHRISTISON, '30
RALPH S. FEOLA, '31, Sept. 21*
HYMAN I. FRIEDMAN, '21, June 3
WALTER J. PALTZ, '31, Nov. 25
OTIS A. SIBLEY, '31, Nov. 20*
CHARLES W. CROSSLAND, '32, Feb.
ROBERT TATE, '32
JOHN E. FITZGERALD, JR., '35, July 8
CARL A. MAPES, '36, Nov. 26*
CLAUDE A. TAYLOR, '36, 1961*
NORMAN G. TOMPKINS, '37, Nov. 24
JAMES T. SEAVER, JR., '41, Oct. 27
EDWARD Y. WING, '42*
JOHN K. FRENCH, '52*
JESSE G. PENNEPACKER, JR., '53

*Further information in Class News.

sister. Our sympathy and best wishes to all. . . . Edna, wife of **Alex Yereance, I**, also passed away on December 5. Alex wrote that "she fought splendidly for over eight months and amazed everyone by her courage and cheerfulness." Survivors are her husband, a daughter, a brother, and six grandchildren. Again, our sympathy and best wishes to all.

A message on a Christmas card from **Gardner George, I**, said: "At last I have retired and settled in a new home here in Florida. Tried out my new boat yesterday. Am looking forward to a lot of fishing. My serenity was jarred a little this morning. A phone call from Washington, D.C. They want me to come back for some consultations." His address is 3960 N.W. 11th Street, Pompano Beach, Fla. . . . Last October the Brookline Board of Selectmen announced the appointment of **Maurice Lowenberg, VI**, as a member of the Board of Appeals, where he will specialize in problems concerning construction and engineering. He retired in 1955 as senior electrical and supervising engineer for Stone and Webster in Boston. . . . **Frank Smith, III**, sent a card from his home in Honolulu, with a long story about his present and past life, and I'll quote from it in class notes in the March Review. . . . **Frank F. Rupert, V**, of 817 Palmetto Avenue, Melbourne, Fla., died October 17, 1962, as reported by his widow. No further details were received. . . . We have address changes for: **Edward Blade, VI**, Box 214A, Sunol, Calif.; **Roy VanAlstine**, from Long Beach to 470 Cambridge Avenue, Claremont, Calif.—**Henry F. Dolliver**, Secretary, 10 Bellevue Road, Belmont 78, Mass.; **John A. Herlihy**, Assistant Secretary and Treasurer, 588 Riverside Avenue, Medford 55, Mass.

'12

The Alumni Office advises that **Ruben Castro-Beeche** of San Jose, Costa Rico, passed away several years ago. . . . They also advise that **George W. Rapelli-Oliver**, formerly of Buenos Aires, is assumed deceased. . . . **Walter F. O'Brien**, formerly of Forest Hills, N.Y., is also assumed deceased as no trace can be found of him. . . . I see **Link Barry** frequently at the Harvard Musical Association concerts. Link has played the clarinet in the orchestra for some 20 years. He was unable to get to the Cape last summer on account of a minor operation which put him in the hospital for several weeks. He will now be operated on for cataracts in a week or two, after which he feels he will be as good as ever. . . . I talked with **Eric Kebbon** on the phone in New York last week and found him well. He is still semi-active in his profession of architecture.

A word about 1912 contributions to the class fund. There are 192 names on the class roll at present and last year 84 of these contributed to the Alumni Fund. This is only 44 per cent of those who could contribute. Let's make it a point to get this up to somewhere around 60 per cent, which would give us top rating on

the score sheet. A contribution of \$10 will help the fund and also greatly help our class participation. Contributions for the Class of 1912 from 1940 to 1962 inclusive amount to \$314,755, certainly something to be proud of, although our total does not quite match that of 1911 and 1913.—**Frederick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston 8, Mass.; **John Noyes**, Assistant Secretary, 3326 Shore Crest Drive, Dallas 36, Texas.

'14

In the December notes, we included a note from **Hibbard S. Busby** about Elsie Janis, our class guest for the freshman-sophomore football contest. **Norman MacLeod** noticed the item and sent your secretary this most interesting story. As this incident happened 45 years ago, I think it is now safe to publish it. "My division, the 26th Yankee Division, was defending the Toul area opposite Mont Sec in the late spring of 1918. Elsie Janis came into the area to entertain the boys. Our artillery commander was quite smitten by her and took her around some of the battery positions. When he arrived at one of our D Battery positions, he ordered that it fire a few rounds into German territory to let Elsie see how it was done. Now it seems that this particular position was a silent one, never having fired a shot in order to keep its position secret from the Krauts. But the commanding general had ordered it to fire, so fire it did. As nothing else was going on that fine afternoon, the Krauts promptly picked it up from their observation posts, with the result that they let the position have it good and plenty a little later. There were several casualties, unfortunately. However, the boys still loved Elsie, but they had plenty to say about the commanding general. In fact, I withhold the exact commentaries."

Norm did not add that at that time he was a captain of field artillery, was later promoted to major and awarded the Distinguished Service Cross and the Croix de Guerre with Palm. It was not until I dug into some of the war records that I realized the wonderful record that Norm had in the year 1918. Although retired, Norman states that he is busier than when he was in business. How many of us wish we had a good secretary back! I hire one from time to time, but I think more time is spent contacting the secretary, explaining the details, and going back to pick up the typewritten letters, than doing it yourself or just forgetting about it all. Perhaps this is why the class notes are not as long as formerly.

A very nice letter was received from **Jim Reber**, who, except for the summer months, now resides in Houston. Jim was vice-president of the Columbia Rope Company of Auburn, N.Y., before retirement. He expects to be on hand June 12, 1964, to attend our 50th Reunion. Your secretary visited last year's Class of '12 50th Reunion. How young they were! . . . **Ray Dinsmore** and your secretary have been in frequent correspondence,

planning on the many items which have to be checked up on for our 50th Reunion. Is your address correct? This means your permanent one, not your temporary winter one. We plan to publish the roster late this spring; it takes about two months before copies are ready for mailing. Please send corrections not later than April 1.

Herman Affel telephoned me the other day when he was passing through Boston. It was delightful to hear his firm and cheerful voice again after his earlier long hospital session. Herman has been doing a wonderful job as class agent, in spite of his long illness. If you have not sent him his check for the 1962-1963 year, why not give him a lift to help our 1914 record? All contributions are now to be credited to our 50-year gift.—**H. B. Richmond**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.; **Charles P. Fiske**, President, Cashmere Paynes Bay, St. James, Barbados, B.W.I.; **Herman A. Affel**, Assistant Secretary and Class Agent, RFD 2, Oakland, Maine.

'15

In February you will receive our bi-annual appeal for class dues—not often and not much, so stick your check in that postage paid envelope and write a little news about yourself. Do your bit for the class. There will be no high pressure solicitation nor follow-up on this. So—! . . . How about that **Jerry Coldwell**! Our January, 1961, notes described a two weeks' 10,000-mile tour of Europe to visit NATO and U.S. European Command Headquarters that Jerry took for the Defense Orientation Conference Association. And now (at his age) he is at it again. First, he sent a colorful card from Beirut, Lebanon: "Up at 4:30 this morning to make the plane from Teheran to Beirut. Teheran has changed a lot since I was last there 12 years ago. From Beirut we go to Istanbul." Then later from Seoul, Korea, a card showing the Bando Hotel with the description, "The first hotel in the capital city with all the modern facilities and luxurious comfort as only Hotel Bando can offer." To this Jerry added: "This statement is a bit on the optimistic side. Yesterday, I was at the front lines, about 50 miles from here. I looked at the demilitarized zone from an observation post. I also watched the North Korea and U.N. discussions and arguments at Panmunjom. This is very rugged country with rough roads. On to Okinawa later." What an experience! I imagine Jerry could tell an exciting story about his colorful and interesting trip.

There is more delightful and extensive news from **Al Sampson's** returned cards last June. **Mary Plummer Rice**, San Francisco wrote: "I am sorry not to be with you, but it will be different in 1965. While I was East last summer, I showed my science-minded 15-year-old granddaughter around M.I.T., hoping to interest her in 1964. I stayed until November 1 to help with grandchild No. 10. The oldest, 23, is in the Army. The next, a girl, will graduate in June (1962) from the University of California and is en-

gaged to be married. I had a quick jet trip down the east coast of South America last Christmas to Buenos Aires. I went home via Santiago, Lima and Panama. At a dinner of the Northern California M.I.T. Club last evening in Chinatown, I met 50 Bostonians and it made me homesick." . . . **Phil Small**, Cleveland, said: "Just returned from five months in Tucson and Guaymas. Exchequer too depleted to make trip to Boston. Hope to last until 1965 and our 50th! Wish I could be with you on June 11. Grandchildren? Six. List now complete, I guess." . . . Admiral **Bill Smith**, Mobile, responded: "Regret I cannot be with you. Mrs. Smith has been ill for several years and is unable to travel, and I cannot leave her except on urgent business. Have been playing at being vice-president and chief engineer since I retired from the Navy in 1948. Starting to think about re-retiring. No grandchildren but have one stepson, one step granddaughter and one step great-grandson!"

Ray Stringfield, Los Angeles: "Sorry can't make it, we just returned from a few days in Boston, New York and Akron, which included a pleasant evening with **Azel** and **Fran Elbridge Casselman** and **Merrette** were in Los Angeles in April and just had a note from **Merrette** that he had a heart attack while on a fishing boat off Cape Hatteras and was in Albemarle Hospital, Elizabeth City, N.C., but seems to be getting along O.K. Best regards to all. (We also saw **Ray Walcott** and **Pat** in New York)." . . . Funny man **Bur Swain**, East Orange: "What a time I shall miss with tears! All those boys and girls I shall not see. Oh me, it's hard to be poor or short. We live in expectation. Next year? All have fun. Abounding in Tears." . . . **Bill Tallman**, Fairhaven, Mass.: "We leave for the Azores on the 14th to visit our son who is in command of the Naval Air Facility. Still working about eight months a year. Score me for six grandchildren." . . . **Ralph Tiffany**, Winsted, Conn.: "I am still retired and suffering with arthritis or something. I have 10 grandchildren." . . . **Jim Tobey**, now suffering in West Palm Beach: "Greatly regret that I will not be able to make this festive occasion. Have just completed five weeks of lectures at the Yale School of Medicine, and plan to take off shortly for a couple of weeks in dear old Maine. Have one daughter and four grandchildren there, in Farmington, and one son and five more grandchildren in Rye, N.Y. Regards to you-all (Florida language)." . . . **Ed Walker**, Batavia, N.Y.: "My 50th Reunion at Hamilton College comes at the same time so I cannot make it to Boston. My daughter, **Alice Walker Kaiser**, was born in Boston on August 17, 1914, and challenge anyone in 1915 to pre-birth her. Her daughter gave me a great-grandson August 4, 1961! The father is **Roland Newton**, M.I.T., '60, an aeronautical engineer." Well, that's the first competition, we know of, for Virginia (**Thomas**) Johnston's claim to be the Class Baby; she was born in 1916.

Al Walter, Baltimore: "If I ever retire, I'll attend your party or a reunion." . . . Due to family illness **Bob Welles** was un-

able to leave Los Angeles. . . . **Warren Whitman**, Winchester, Mass.: "Sorry. It interferes with my 50th celebration after graduation from Clark University. Thanks and may you all have a wonderful get-together." . . . **Speed Williams**, New York City: "Sorry we can't make it this year. Our best to everyone." . . . **Gardiner (Willy) Wilson**, Mountville, Pa.: "Expect you will have a fine party and regret I cannot be with you. Still stretching it out here in Mountville, Pa., enjoying good health and hoping to see **Azel** and wife down here for a visit some day." . . . **Harold Woodfall**, Cambridge: "Retired since April 11, 1961. Have two sons both married and seven grandchildren." Remember, those messages were written in May, 1962.

In acknowledgement of the flowers we sent to **Ted Spear's** services in Rumford, Maine, **Fran Spear** wrote: "Your basket of flowers was beautiful, and it was so very kind of 1915 to send it. There was a great deal of comment as people thought it remarkable that a college class would remember. It helps at a difficult time like this to know that my loss is felt by others." **Ted** was a grand fellow in our class. . . . It's sad to record the passing of **Roy Loring Hayward**, who died November 10, 1962, in Taunton, Mass., following a long illness. **Loring** was an outstandingly loyal classmate, who up to that auto accident he had a few years ago, had never missed a Boston Class Dinner or Five Year Reunion. **Loring** had his own civil engineering business in Taunton. **Ruth Hayward** wrote: "I am sorry that **Loring** couldn't have enjoyed the class reunions more these last few years. He really had a difficult time and didn't recover much after the auto accident three years ago. He was very patient; having to sell his business and retire was a sad blow for anyone as active as **Loring**. He lived for his work." We'll all miss **Loring**. Our class sympathy goes to **Ruth** and her family. . . . **Edward F. Waldron** died May 18, 1962, in Edgewood, R. I. . . . Pay your class dues to "help **Azel**."—**Azel W. Mack**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

'16

Here it is February already, and we have three-fold reminders from **Ralph Fletcher**, **Steve Brophy**, and **Jim Evans** that another reunion is coming up—the 47th, on June 6, 7, and 8 on Cape Cod. These affairs seem to come faster than they used to, but are ever more pleasant and much more "rewarding" (that's the word today). And now, imagine, we have reached the point where we can say quite smoothly: "It was over 50 years ago when I told my teacher in the senior class of high school (or prep school) etc., etc., etc." . . . **Hovey Freeman** apparently is busier than ever in Providence and admits that "I should have my head examined." Since we last heard from him, he has taken on the presidency of the second largest hospital—"running a campaign for over \$1 million, building two new buildings; and handling the usual

problems of trying to keep everybody happy, particularly the medical staff, is a much worse job than trying to run an insurance company." The **Freemans** now have 21 grandchildren (tops for the class, we believe), and a great-grandchild was due in December, so, as he says, "we are getting old." **Hovey** has recovered from the four breaks he got on his so-called vacation last winter but he still has "trouble with my back which slips out occasionally; but I am lucky to be alive so I have no complaints." We asked him for a bit of philosophy and he replied that his favorite saying is "Keep your shirt on!" He says: "It doesn't make any difference whether it is man or woman—it is sound advice."

We have (December 1) two advance Christmas cards: the first from the **Irv McDaniels** in Malaga, Spain, is a beautiful, original, hand-painted-by-IBM (nothing to do with business machines) card—a sequel to their 1961 card; the second from the **Howard Claussens** is an unusual color photoprint of a sea-gull taking (believe-it-or-not) a biscuit from the outstretched hand of a handsome young man. The **Claussens'** card is unusual because, according to **Howard**: "Gulls do not take food from the hand; they close in, back off, and then sulk in the water looking for free feed thrown to them." But this gull did take the **Ritz cracker!** And the hand is that of son **Fred**; the location, **Edgartown**, **Martha's Vineyard**, in September, from the stern of **Howard's "Schipperke."** As of November, **Howard** was spending up to 40 hours weekly—and for the next two years—learning celestial navigation. Says it is very difficult to comprehend, uses an entirely new language, and the math is harder than senior math at Tech (as he remembers it). Since our 46th reunion, son **Fred** has become an accredited lawyer; he is now with **Spencer and Stone** in Boston. The November 16 **Falmouth** paper had an interesting article, "Cape Politics Background for New-Admitted Lawyer," about **Fred**, his admission to the bar in Massachusetts in June, and the political background of his family—grandfather Congressman **Charles L. Gifford**; mother, **Florence**, President of the Massachusetts Women's Republican Club, and a member of the state party committee.

We must report on our recoveries next. Early in October **Charlie Lawrance** indicated he was back home again after an operation, "recovering strength rapidly and supremely happy." And: "Just one more slight operation, then back to full health, except that I may not be allowed to drive my car any more on account of my heart history of the past years." **Charlie** says he and Mrs. **Lawrance** hope to be ready for the next reunion: "The picture of the last one is framed and hangs in my bedroom, where it is enjoyed daily." . . . **Jim Evans**, The Indomitable, continues to progress well since his heart attack last August, does some substitute teaching again in the **Paterson**, N. J., high schools and is looking around to see what to do next! It goes without saying he can hardly wait for the 47th Reunion next June on Cape Cod. . . .

Bill Barrett is back practically full time on the job as vice-president and secretary of Metropolitan Life in New York—just as he predicted. . . . And **Harold Mills** (as of December 1) is up and around recovering from his arthritic vertebrae trouble and traction-stay in a hospital in October. He should soon be accompanying your secretary on nearly daily walks to the Mountain Lakes, N.J., post office. He asserts, in a letter to Ralph Fletcher, that he expects he "will eventually be nearly normal" if he doesn't "move any more radiators" in his home. He reports a visit from **Earl Mellen** during his hospital stay.

Earle Pearson, writing from Vero Beach, says he has no interesting stories but, as he says, "to quote the November column, I am like **Arvin Page**, one of 'those '16ers who can't scrape up the dough to visit foreign shores.'" But he "did dig into the barrel this summer and found enough to travel north to attend my 50th high school class reunion, and what changes we saw! Hope we will be around to dig into the barrel again in 1966 so we can attend our '16 50th." He hasn't seen any '16ers for years, but if any are passing through Vero Beach, he "would be pleased to have them call." He notes: "We play around here in Florida and like most people here, pay little attention to Castro and his rantings. We are just annoyed that he was allowed to get where he is." . . . A postcard from Jamaica back in November gave every indication that **Len** and **Ruth Best** were having a delightful time on a Grace Line cruise. They were on a New Jersey Chamber of Commerce cruise to Curacao (Netherlands Antilles), La Guaira (Venezuela), Cuba, Kingston (Jamaica), then home. (The parentheses are ours; we looked in our Atlas; the postcard really said Cuba. Secretary) . . . In recent correspondence, **Phil Baker** expresses the wish that he were near enough to take in the New York luncheons. All that has to be done, of course, is for him (or any others) to plan some kind trip to New York, and then plan very carefully to have it coincide with the New York 1916 monthly luncheon, held in the M.I.T. Club of New York rooms in the Biltmore Hotel, the Thursday following the first Monday of each month.

Speaking of automobiles and the good old days, an article in *The Boston Globe*, November 26 (Joe Harrington's column 'All Sorts') under the caption "Steam Replace Gasoline? This Group's All For It" mentions one '16er—**Henry B. Shepard** of West Newton. It reads in part: "There is a little group of serious fellows who are convinced that we are driving the wrong kind of cars. Instead of being propelled by a gasoline engine, they think that if a proper study had been made years ago into the power of passenger vehicles, we'd all be riding around in steam driven cars . . . These enthusiasts have a soft spot in their hearts for the old Stanley steamer that was made in Newton, and they go to a lot of expense and the expenditure of time to keep these old cars functioning." The argument of one enthusiast for the steam car is its simplicity. "There is no clutch and no geared

transmission in the steam car. Under the front hood is the boiler and the steam it generates is controlled by the throttle. Open it slightly for a slow start; wider to pick up speed." The article lists some steam car owners in New England; a quick check indicates that none but Henry's name appears in M.I.T.'s 1961 Centennial Alumni Register.

Our monthly travelogue with the **Irv McDaniels** is located in Spain, then to southern Portugal, and back to Spain where in October they settled down for a quiet and colorful winter in Malaga; their address—Villa Dos Estrellas, Arroyo de la Miel, Malaga, Spain. In their travels they covered the coast line pretty much from Gibraltar along the southern Spanish and Portuguese coasts and up the west coast to Lisbon, sampling the beaches, the de luxe hotels (many at \$7 to \$10 per day per couple), and the sights, old and new. As Irv tells it: "First, we went over to Parador Fuentes Bravia, near Rota; and had several days on the beach and regained most of our tan. At night we had a lot of bridge at the Officers' Club, and we won two duplicate tournaments—so you know we had a great time. Then we had a week in southern Portugal which is not visited by the tourists. We went via Sevilla (Route 431—all roads were in excellent condition.) We passed through the marvelous town of Niebla, encircled by old Moorish walls, (circa 1000 A.D.) It is now mostly in ruins. Then we had lunch at Huelva; it was from here that Columbus made his first voyage to the Americas." Irv points out that Portugal has more than 60 wonderful beaches, some the finest in the world. Their first beach was Monte Gordo, with its Vasco Da Gama hotel: "Perfect beach, pool, terraces, best rooms with all meals \$10 for two." They visited Silves, "the first Moorish capital in Europe. For hundreds of years it was supreme but today it is a native village. There is much to see there and this place is a must." From there they went to Lagos, and its beach, Meia Praia, "which we consider to be the finest beach in the world. Over 10 miles long, in a graceful sweeping arc, nice clean sand, no jetsam and flotsam, and the temperature just right (warmed by current from Africa). We will never forget our two days there in a superb hotel; at night we sat on our terrace and looked down on the Portuguese Navy. What a fleet they have!" Then on to Sagres, the southwest point of Europe: "It was here that Prince Henry the Navigator had his school and from here that he made several trips of discovery. It was from here he captured Ceuta in 1513. And he was responsible for the discovery of America, South Africa, and the various routes to China. Too bad he never lived long enough to hear of the discoveries of two of his students—Vasco de Gama and Columbus." Irv compares things with those he saw there two years ago: "Then, we were the favored nation. But not today! We saw no outward signs of enmity, but it seemed to me that we were only tolerated." But it is the little things that count. In Spain, everyone has a garden with gorgeous flowers. Every city and barrio has its parks, fountains,

and promenades. In southwest Portugal we saw none of these things. No flowers, yet everything grows profusely. It is hard to explain the Portuguese; they seem sullen, beaten, no joy of life. We were glad to return to Spain and the song and the dance and the laughter." Then back in Malaga: "As we sit on our terrace, the rest of the world seems so far away. The sunrises and the sunsets are as beautiful as ever, and we occasionally see the Atlas Mountains in Africa. The cook in the house below us is still practicing for the grand opera, but she will never make it. In the distance we hear the cries of the laborers: 'Arriba, arriba, arriba' and 'Agua, agua, agua.' A knife sharpener passes by our lane blowing his eerie flute. Our cook returns from the mercado loaded with melons, cherimoyas, tomatoes as large as cantaloupes, and pescados of every hue and color. All our old friends drop in from time to time and it seems as if we have never been away. And although it is November, we contemplate whether or not to go for a swim. And finally the sun sinks and the vestige of the Mediterranean disappears, and we are assailed by the aroma of our dama de la noche. And from inside the house comes the aroma of 'Gazpacho' and we know 'Soup's on.'" Our best to Irv and Kay; Irv surely makes things sound enjoyable!

Frank Ross writes from Naples, Fla., where they arrived in October to continue their custom of going south for the winter and staying until early May. Reason? As Frank puts it, "'cause my old bones won't take the cold northeastern weather the way they used to." On the way down, they stopped at you-know-where, Pinchurst, where with about 375 others, Frank played in the North and South Senior Golf Tournament "and got beaten 2-and-1 in the finals." He says there isn't much excitement now "but I'm having a fine time and a lot of fun." Do you remember our 1941 (was it?) reunion, when Frank arrived with his new Lincoln; and do you remember the sign on his bumper, large, definite: "Vote for Willkie," right alongside his Connecticut license number "F D R"? We do; and more, we hope to see Frank in June!

The **Arthur Shueys** had a trip around the world this summer which included Australia. As Arthur says: "It was the trip we began last year when I left half my stomach in England." They sailed from San Francisco August 9 on the P & O S.S. Arcadia, and visited Hawaii, Japan, Hong Kong, Manila, four ports in Australia, including a week in Melbourne where they were "royally entertained" by their cousins. Further: "We went from Sydney to Melbourne on the S.S. Oriana, one of the two new P&O ships. She is equipped with two bow and two stern side propellers, so she needs no tugs for docking. Too bad Australia is 13,000 miles away from most everywhere, for they grow orchids in the fields around Sydney." They came back through Ceylon, India, Egypt, and landed in London to be greeted by a son and his wife who were there doing some consulting work in England and Scotland. Arthur notes: "Had tea with my English surgeon who

again admired his handiwork, and we got home on the France on November 7."

In the August 13 issue of the National Observer, **Bob Wilson** was mentioned in a "current-event" about the Atomic Energy Commission (AEC)—two lawyers appointed to fill the vacancies on the 5-man commission: "In their new posts, Mr. Palfrey and Mr. Ramey will work with Glenn Seaborg, a Nobel Prize-winning chemist who is AEC chairman; Leland J. Haworth, a physicist; and Robert E. Wilson, a chemical engineer." On November 27 in Washington, Bob spoke officially at the opening of a Panel Discussion on "Policy Objectives and Government Organization: Atomic Industrial Forum." He talked on his "favorite subjects"—the private ownership of special nuclear materials, and plutonium buy-back policy, because, as he said, "I have been talking about both of these for more than a year and nothing definite has yet been finalized along these lines. . . . As you may have noted, Congress had a lot of other problems to handle in last year's session, but I very much hope that the necessary legislation will be enacted before I finish my service with the Commission, because I feel that accomplishing this will mean much, both to the government and to the cause of atomic power at home and abroad." Further on he observed: "The main disadvantage to industry of continuation of the Government monopoly (ownership of special nuclear materials) is the fact that, as long as industry anticipates a low rental charge on its nuclear inventory, it has little incentive to try to minimize inventory, conserve neutrons, or get along with low enrichment fuel if it can help solve other problems by using more inventory or higher enrichment. All this results in a serious 'distortion of the technology' at a critical stage of reactor design when truly competitive designs are coming onto the drawing boards." We are glad to report as of early December that Pearl (Mrs. Wilson) has been making slow but steady improvement since her flight back to Washington in November, after her early-October serious accident in Italy and hospitalization there. Deafness due to a severe concussion has not cleared up, but her doctor feels confident it will in due time—he says it may be months before she is fully back to normal. She expresses appreciation for letters and messages received.

John Fairfield is back teaching, but only one-quarter time, at Rensselaer (RPI) in Troy, N.Y. He writes enthusiastically of the three-months trip he and Mrs. Fairfield took around the world last spring, starting February 1. Starting by jet from New York, the trip included Hawaii, Japan (Tokyo, Kyoto, Nara, Kamakura), Hong Kong, Australia, Bali, Djakarta, Singapore, Bangkok, New Delhi, Cairo, Karnak and Luxor, Athens, Capri, Florence, Zurich, Interlaken, Lucerne, Barcelona, and home. In Hawaii, after sightseeing, they were royally entertained at a private club and Tahitian dinner by ex-RPI faculty. John's comment: "Exotic flowers, lovely climate, relief from New York's February weather, extremely friendly and relaxed people."

Next, to Japan for nine days, where in Tokyo: "As taxi men usually lacked English, one asks the hotel clerk to write in Japanese the name and address sought, for taxi man. Taxis were cheap, abundant, fast, wild, frightening. Tokyo was bustling, energetic, commercial, with fine department stores, famous Ginza shopping area, some scenic spots. We were well entertained by four friends-of-a-friend—they taxied us to sights and restaurants (sukiyaki, tempura, sake—they prefer Chinese food)." In Nara, "the oldest city in Japan," they mention "ancient temple and pagodas, deer park, museum of statues dating to 700 A.D., beautiful gardens, the 'Tea Room of the August Moon'; the largest wood building in the world houses a 500-ton bronze Buddha 53 feet high. On our return, we were annexed by three girl students eager to practice English and quiz us. One guided us through Kyoto sights and a new Buddha war memorial. . . . Japan was most charming and deserved much more time." Of Hong Kong, John comments: "Fine harbor full of naval vessels, ocean liners flying all flags, junks, sampans, rowboats, floating schools and churches; a free port, so it is a shopper's paradise, especially for dress goods. The refugee problem is serious; 10,000 enter per month, and settle on steep mountain slopes and make terraced gardens until the government settles them in long blocks of 1-room apartments. Millionaires and poverty; many good new factories hum; rickshaws on streets." We must leave further comments for another month.

Earl Mellen, who retired as president of Weston Electrical Instrument in July, 1959, reports that his schedule remains about the same. He says: "Now my old company which was taken over by Daystrom, Inc. has in turn been taken over by Schlumberger, Ltd." He has gone on the boards "of a few more companies" and "has one or more meetings each day of the week." Then: "My golf has suffered greatly this past summer. Glad to receive the picture of the 1916 reunion last June. I might add that my Dad will be 96 on December 24—also we welcomed our 16th grandchild on October 12." . . . **Don Webster**, in a letter to **Jim Evans** wrote: "Don't suppose that you are making the New York luncheons yet. If you do on December 6, drink to me on my 68th birthday." But Jim has been back to the monthly luncheons, and he reports the following 1916 attendance at the December 6 get-together: Joe Barker, Steve Brophy, Art Caldwell, Jim Evans, Herb Mendelson, Len Stone, and Bob Wilson. As he informed us by telephone, if he was remembering correctly the score of 1916 versus 1917 was 7 to 3, with '17ers Morton, Neuberger, and Proctor. . . . We also have stories from or about Van Bush, Coke Flannagan, Flipp Fleming, and George Maverick; these will be given in next month's column.

This closes the column for the time being. As has been said before—to help keep the column full and interesting, write a little but write often.—**Harold F. Dodge**, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.

'17

The questionnaires received to date (early December) from about 100, or less than one-third, of the living members of the class furnished the basis for some interesting statistics. Out of 79 who reported having children, 12 had 1 child, 35 had 2, 24 had 3, 7 had 4, and one had 5. Seventy-one classmates reported having grandchildren: 5 had 1 grandchild, 4 had 2, 7 had 3, 7 had 4, 6 had 5, 9 had 6, 10 had 7, 5 had 8, 1 had 9, 5 had 10, 2 had 11, 4 had 12, 1 had 13, 1 had 14, 1 had 15, 1 had 16, 1 had 20, and one had 21 17/18. We consider those having 10 grandchildren or more worthy of honorable mention. In the 10 grandchild category we have **Donald S. Kendall** with two children, **Ken Bell** with four children, **Frank Peacock** with three children, **A. R. Williams** with two children and **H. P. Eddy** with three children. In the 11 grandchild category, we have **Heine Gartner** and **William H. McAdams** with three children each. In the 12 grandchild category, we have **Al Moody** with five children, **F. E. McKone** with four children, **Lewis Sanborn** and **Paul G. Woodward** with three children each. The next group have four children each: **G. P. Igleheart** with 13 grandchildren, **James J. Storow** with 14, and **Ken Richmond** with 15. **Robert D. Fay** has three children, 16 grandchildren, and three great-grandchildren. **Dean Parker** has four children, 20 grandchildren, with one set of triplets in the group. **Ralph Ross** has five children, 21 17/18 grandchildren at the date of reporting, and one great-grandchild.

Only a few voted on the reunion questions. On the question of informal yearly reunions, the vote was 25 yes and 27 no. The vote about combining the yearly reunions with some other class was 16 yes, 35 no. The question about a big interim reunion in 1965 drew a vote of 27 yes and 19 no. The general reaction to a retirement philosophy was "keep busy." Specific comments about reunion accommodations and program are being forwarded to chairmen of the 50th Reunion hotel and entertainment committees. . . . **Clair Turner**, Chief, Health Education of the World Health Organization, writes from Geneva, Switzerland: "I have said yes to being retired from my pre-65 vocation because I assume that refers to my 30 years of teaching at M.I.T. I have also retired from government service, from the University of California, and from the National Foundation for Infantile Paralysis since then. I expect to retire from my present post in 1964 and from a joint WHO/UNESCO consultantship in 1965. The nature of my present post gives the answer to the kind of activities in which I am engaged. My retirement philosophy would seem to be that it is desirable to keep on retiring indefinitely."

Frank E. McKone, who divides his time between Dover, N.H., and Canajoharie, N.Y., writes: "My 55th at Dartmouth comes in 1963 so I feel that I must be at Hanover next year at reunion

time. In January, 1960, the McKone family took over the Beech-Nut Hotel at Canajoharie, N.Y. I am trying to get this hotel 'in the black' and we have done much to entice people to come down from the thruway to stop over with us. My son Ed is the manager. We have had the hotel four years and the business will be doubled in two more years. There is skiing at Mount Royal near here in winter, and there is a nine-hole local golf course nearby. Canajoharie was settled in 1750 by Hendrick Schmembling on land the hotel occupies. His well is in the basement. When George Washington in 1783 finished his tour of Ticonderoga and later Fort Schuyler, he came back through Cooperstown, Cherry Valley, and stopped April 3 at this spot then owned by Johannes Rueff. By then, the first customers, the Mohawks, had been driven into Canada and ever since the hotel has persisted in trying to get patrons to replace the Mohawk business." . . . Colonel **Claudius H. M. Roberts** says that he resigned, not retired. He says: "I got fed up with the old rat race and quit to take a breather. I have no job at present. We are taking a vacation in Canada, Alaska, and points west and north to the Arctic Circle. Incidentally, it is fun. We have driven 7,500 miles since we left Syracuse, N.Y., on October 3 and we're not halfway yet."

Carleton C. Adams, of Providence, R.I., who will retire in 1964 writes: "Practically all my outside time is put into my local church, Faith Church, located in Providence. I am secretary-treasurer of this church. We started as a mission, but have grown into a church and are now branching out on radio. We are growing fast and one of these days expect to expand into a bigger building. We preach the simple gospel and try to be as much as possible like the early church, which was a church of power. I believe that we are on the verge of great and terrible things—terrible, if we don't get busy and get the gospel out to the ends of the earth, and literature by the ton to those millions who have just learned to read and write and who are being fed communistic doctrine. It can be a time of great spiritual blessing if we obey God and meet the challenge of this hour." . . . **Lin Noyes**, publisher of the Ironwood, Mich., Daily Globe, writes: "I enjoyed the reunion. It was mighty good to see so many of the old gang after all these years. I may not make any of the intermediate gatherings but will certainly be at the 50th. There is nothing much to report other than we had a grand visit with **Phil and Betty Hulburd** at Meriden, N.H., after we attended the reunion. I am keeping busy and enjoying life in general. I expect to head South or West later for a bit to escape some of the snow (average winter snowfall 150 inches) that we have here in northern Michigan."

Herbert Greenewald, Jr., '43, wrote us that his father, **Herbert Greenewald**, listed with our class, passed away at the age of 81 on October 12, 1962. Herbert, Sr. formerly lived in Moorestown, N.J., and changed his address not too long ago to his son's address in Dallas, Texas.

Neither our class history nor the Alumni Register gives a clue to his activity other than that he attended classes in chemistry.

Walter Whitman advises that he has just retired from the State Department. He had to miss the 45th Reunion because his son was married in California at that time. . . . **Matty Matthews** couldn't be at the reunion because he was in Hong Kong, China at the time. . . . **Dick Lyons** is busy in semi-retirement. He is active in the Houston and Harris County Unit of the American Cancer Society, having been chairman of the 1962 Crusade, and is now vice-president of the unit. He is on the advisory board of one of the large hospitals in Houston, and is a board member of one of the large charitable organizations. . . . **Ray Brooks** took a Caribbean cruise about the time of the Castro trouble. This caused a travel diversion to Bermuda. To add to the difficulty they ran into a bad storm at sea that tossed everybody around. Ray and wife had to take a number of days at home to rest up from their holiday. . . . News from the class luncheon at the New York Club runs something like the following: **Dick Loengard** is using a cane temporarily to ease a muscular difficulty. . . . **Sully Sullivan** says he is supporting a hospital. He and his wife are leaving for Sun Valley for six months of sunshine. . . . The following is offered with apologies to Liz Taylor: "A university held entrance exams for a group of former GI's. One question was 'Name two ancient sports.' A former sergeant racked his brain then came up with an answer that passed him. He wrote 'Antony and Cleopatra.'—**W. I. McNeill**, Secretary, 107 Wood Pond, West Hartford 7, Conn.; **C. D. Proctor**, Assistant Secretary, P.O. Box 336, Lincoln Park, N.J.

'18

Among the skills which should be striven for by any college graduate is an ability to make words run smoothly to their goal with an assured incisiveness and skill. Sometimes they pour out in a splendid and effortless stream, as was perhaps what happened when **Gretchen Palmer** (general science) decided not to retire to Hawaii about now, but instead to become the parish secretary at Saint Andrews' Church in Buffalo on February 1, 1963. New address, 3105 Main Street, Buffalo, 14. In November the newspaper columnists fretted a bit over whom the president was likely to put in charge of foreign aid, following two appointments that did not work out to his liking. In their cataract of speculation could be found the name of **William C. Foster** (electrical engineering) who had once held that very portfolio. But the administration decided to keep him at the head of the Disarmament Agency where he has been quietly doing a job requiring a few good superlatives.

Presumably **James C. Irwin, Jr.** (chemical engineering) had little to say while representing M.I.T. at the inauguration of a new president at William Jewell

College located at Liberty, Mo. . . . **Ben Ballantine** (mechanical engineering) and I exchanged a few uncarpentered words last fall at a church supper in his town, which adjoins mine. For the last five years he has been teaching at the University of Miami in Florida. He now contemplates carpentering a few changes on his house. It can be found on the north shore of Lake Monomonac, which splits the Massachusetts-New Hampshire border. We heard again that Robert Frost's daughter is Ben's sister-in-law, and that Ben has rented the Frost Florida home in times past. Unhappily, Ben's own daughter has died, but her three children are close by in Westminster, Mass. . . . What smoothly running prose is to be found in **Sam Chamberlain's** (architecture) new book we do not know. It is certain that the Saturday Review has recommended this \$10 volume on "The New England Image." It is equally certain that "The Frigate Constitution and Other Historic Ships," written by your secretary (mechanical engineering) in 1928, has prose more askew than will be found in his later efforts. But Goodspeed knows the book has been a collector's item for years, and advertised a copy for \$85 in their December bulletin.—**F. Alexander Magoun**, Secretary, Jaffrey Center, N.H.

'19

Alexis Wiren "graduated" from his business career early in 1963, but seems to be making a good job of keeping busy. He has just published a book called "Office Supervisor's Manual," using the approach which is most helpful to supervisors, printed on one side only so that the reader may make notes. He is now a management and communication consultant, and has taken up painting in oils. . . . Professor **James Holt**, Mechanical Engineering Department of M.I.T., was retired on October 1, 1962. In November he represented Dr. Stratton at the inauguration of the president of the State College at Bridgewater, Mass. . . . Professor **Carl L. Svenson**, Professor of Mechanical Engineering at M.I.T., also retired this fall. . . . The following changes of addresses have been reported: **Alan H. McIntosh**, from Elm Grove, Wis., to 415 Oakland Avenue, S. Beloit, Ill.; Miss **Clara Poppic**, 2627 Hillegass Avenue, Berkeley 4, Calif.—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N.Y.

'20

Your secretary owes an apology to **Carl H. Leander** of Quincy, Mass., for failing to point out, last month, that there were two Carl Leanders in our class and that it was **Carl T.** of Philadelphia whose death was reported. **Carl H.** is very much alive and my carelessness in not mentioning the middle initial could well have caused some embarrassment. At any rate the omission had the good effect of bring-

ing me a very pleasant telephone visit with Carl, and I can assure his many friends in the class that he sounded chipper and appeared to be in good health and spirits. His home is at 145 Whitwell Street, Quincy. . . . Last month's reference to **Johnny Rockefeller's** new book "The Poor Rockefellers," was made before excerpts from it appeared in The Review. I am sure many of you read the account of his undergraduate days with the keenest interest and enjoyment. The book, published by Vanguard Press, has been receiving many favorable reviews and its author many compliments for his witty and entertaining style. One review says, "John W. has the sharp nose and some facial features of the famed John D. and the broad smile of the Empire State's Nelson, to whom he is a distant cousin." Mentioned also is the fact that Johnny did some writing for The Tech and was one of the founders of Tech Engineering News.

A card from St. Croix, Virgin Islands, evidences that our class Marco Polo is roaming again. I refer, of course, to **Chuck Reed**. Can any of you hold a candle to Chuck in the travel department? If so, let's hear about it. . . . Looks as if our old friend, **Karl Bean**, may have retired. He's departed from his long-time hometown of Winchester, Mass., and is in Bedford, N.H., 16 Orchard Hill Circle. . . . **Dave Fiske** has moved from Natick to Dover, Mass., Normandie Road. . . . **Harold Hedberg** is with Albany Felt Company, Albany, N.Y. . . . "**Toots**" **Kinghorn** goes on the lengthening list of classmates now in Florida, address 2054 Dolphin Boulevard, St. Petersburg. . . . **Johnny Nalle** has moved from Belmont, Mass., to Charlottesville, Va., 1825 Wayside Avenue. John attended the University of Virginia before he came to M.I.T. so maybe he's just going back home. . . . **Jim** and **Lucy Gibson** are "somewhere in Europe." They departed early this fall by ship, landing at Venice and touring around Germany and elsewhere before settling down for a bit, in Spain we suspect. Let's have an account of your adventures, Jim.—**Harold Bugbee**, Secretary, 21 Everell Road, Winchester, Mass.

'21

It's Fiesta time in Mexico! The 15th annual celebration of the M.I.T. Club of Mexico City is scheduled for next March 7 to 9 and many '21ers will recall the very pleasurable Class Reunion we held there on the occasion of the club's 50th Anniversary and Fiesta in 1960. Once more, both **Manuel Sandoval Vallarta** and **Viviano Valdés** are Fiesta Counselors, which practically guarantees that anyone who participates will have a glorious experience. Prospective "Eager Beavers" can address a request for reservations to the club at Angel Urraza No. 1311, Mexico 12, D.F. One of the enthusiastic attenders at our reunion in Mexico was **Herb DeStaebler** of 400 West Lincoln Avenue, Lititz, Pa., who started a chain letter last November to various members of the Class of 1921,

reading: "In turning to the 1921 Class News in the Review, I thought they seemed pretty far to the front and was pulled up short to find that, out of 71 classes, we were only 30 from the start. Because time is running shorter and because the 1921 reunions in Cuba and in Mexico were so delightful, don't you think it is about time we stirred up another one? The Tokyo Club is active enough to have a report in this issue of The Review and as I see only one '21er in the Alumni Register, **Juntaro Kawai**, maybe we should start promoting now.

"If the Mountain won't come to Mohammed, perhaps Mohammed can put on his walking shoes. I am thinking that **Helier** and **Graciela Rodríguez** would join us if we had a gathering in Madrid. Also, The Review notes: 'Hawaii Club gains in membership.' I would be satisfied with almost any place at any time, in case anybody is interested." One of the first replies which Herb received came from **Ollie Bardes** of the Bardes Corporation, 4730 Madison Road, Cincinnati 27, Ohio, who wrote: "I choose Tokyo. When do we go? I had a pleasant visit with Helier and Graciela in Madrid last summer."

Next in line came a reply to Herb from **Miles M. Zoller**, Box 598, Cincinnati, Ohio, saying: "I received a copy of your letter to **Cac Clarke**, suggesting that we might have a class reunion in some far off corner of the world. A good idea, but for the next year or so I will not be among those present. Thought you might like to know that I am officially retiring as of the first of August, 1963. In the meantime, we have sold our home here in Cincinnati and will change our residence to our Florida establishment shortly after the first of the year. Between that time and retirement day, I will be shuffling back and forth. Our Florida residence is located at 140 Fairview East—Tequesta, Jupiter, Fla. In case you get nearby sometime this winter and could pay us a visit, our phone number there is 746-7852." Anybody else want to take over the microphone and add some ideas or suggestions for consideration? . . . During December, our daughter, Eleanor, was sent to U.C.L.A. by her Grand Rapids hospital to take a special course in prosthetics. Having heard us speak so highly of **Jack** and **Marge Kendall**, she looked them up and was most royally entertained. They drove her all over the Pasadena and surrounding area, had dinner in Chinatown and then telephoned us back here to say how nice and warm the California weather was while we were having snow and a particularly cold snap. It was mighty good to talk to Jack, though we must confess we couldn't place the familiar voice at first, never dreaming it was a long distance call! A welcome letter from Jack says, in part: "We had a grand visit last spring with **Ray** and **Helen St. Laurent**. You'll soon be receiving our Christmas letter telling of our winter trip to the Southeast and our summer trip to the Northwest. We now have over 43,000 miles on the Chevy that we picked up in Detroit in 1961 enroute to the 1921 reunion in Plymouth. Marge

joins me in best regards to you two." We were sorry to hear that Jack had been hospitalized in September. He convalesced at home until he returned to full time at the office in early December. It is good to know he has fully recovered and that Marge has also completely recuperated from an operation earlier last year. Our sincere thanks go to this swell couple for all their kindness to Ellie and for the unique set of stamps which Jack (himself a collector of both stamps and coins) sent for our collection.

Gus Kinzel has been elected a trustee of the System Development Corporation of Santa Monica, Calif., a non-profit research and development organization. . . . **Joe Wenick** says he attended the November meeting of the Alumni Council in Cambridge together with **Mich Bawden**, **George Chutter**, **Josh Crosby** and **Chick Kurth**. Joe's comment was that they all looked so young and well and happy. . . . **Dr. Thomas P. Campbell** of Denver has moved his engineering offices to 1850 Western Federal Savings Building. . . . **Dr. Joseph L. Gillson** continues in "retirement" as a member of the M.I.T. Department of Geology and Geophysics. . . . **Dr. Flemmon P. Hall**, Manager of Research for Speer Carbon Company, gives a new home address at 206 Granger Road West, Syracuse 4, N.Y. . . . **Myer H. Naigles**, President of the Dolphin Swimming Pool Company of Elmsford, N.Y., reports that he lives at 48 Seneca Avenue, Yonkers, N.Y. . . . **George** and **Anne Schnitzler** are following their scheduled retirement plan and have gone south from their Brookline, Mass., home to spend the winter at 1410 Euclid Avenue, Miami Beach 13, Fla. . . . **Arthur G. Wakeman** has a new home address, 130 Limekiln Drive, Neenah, Wis. . . . A note from **Bob** and **Bertha Cook**, wintering at their Ft. Lauderdale, Fla., home, says, in part: "We came south early in October and have had comparatively good weather."

Harry Field writes: "Saul Silverstein will stop over here in Honolulu next Thursday, December 5. **Fred Kingman** and I plan to drink a lunch together with him when he arrives. I will break out my M.I.T. martini pitcher which I won at our 40th Reunion." Saul left the U.S.A. late in October for his 12th overseas trip since 1952 and his second trip around the world—similar to the one he and Rigi made a year ago. We are privileged to be on the list to receive the interesting travel letter which he originated as a means of keeping in touch with his family and for which distribution has expanded in direct relation to the excellence of the "potpourri of diary, travelogue, wise cracks and serious commentary on experiences and the world in which we live," as Saul terms his "magnum opera." Unfortunately, he had just arrived in Brussels when his only sister passed away in Boston. Saul made a hurried trip back for the funeral and then flew back to Paris to resume his trip to Germany, Switzerland, Italy, Israel, India, Taiwan (Formosa), Japan and Hawaii on the way home. Despite his concern that overseas mailings may not come through, due to reported hotel staff pil-

fering of stamps, they are received, but we do resent the fact that airmail from Israel arrived sans stamps for the second year in a row—lifted by someone in the postal services after the cancellation had been applied.

You received the Class Letter from Ray St. Laurent regarding the honor conferred upon **Irv Jakobson** last month in receiving the annual Silver Stein award from the M.I.T. Club of New York. Hope you were present to congratulate Irv. We'll report on this happy event in a later issue. Also, Irv is mentioned in the January issue of Yachting magazine as one of a number of men prominent at a symposium on aluminum boats and fittings. . . . We have just been informed of the death on October 21, 1954, of **Joseph Henry Guild** of Salem, N.Y. Sincere sympathy is extended to his family. A native of Rupert, Vt., he will be remembered by dormitory residents who were members of Course I. During World War I, he left the Institute to serve as a mechanic in the A.E.F. Ambulance Service and later was with the 13th Battalion of the Italian Army. He operated the Salem Garage until his death. . . . If these notes be short in consonance with the month, won't you please take a little extra time out to write to your secretaries and help to bring this column back to normalcy?—**Carole A. Clark**, Secretary, c/o International Electric Corporation, Route 17 and Garden State Parkway, Paramus, N.J.; **Edwin T. Steffian**, Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston 16, Mass.

'22

Your secretary hopes that once and for all the Abominable Snow Man's ghost in Buffalo has been laid extremely low as we report five consecutive perfect golfing days in December and many in November. Upon completion of these notes, his temporary address for a few days will be at another course near Augusta—report on scores next month. . . . It was nice to see **N. Conant Webb** at the M.I.T. Club in New York at the Biltmore fully recovered from a heavy tennis season. Mid-Atlantic Vice-President, **C. George Dandrow**, represented the Institute at the inauguration in October of the new president of New York University. . . . **William H. Mueser**, as Honorary Secretary, represented M.I.T. in November at the presidential inauguration at Teachers College, Columbia University. . . . **Harvey L. Williams**, Chairman of the Commission on Commercial policy of the International Chamber of Commerce, was the main speaker at Tabor Academy in Marion, Mass., at the Tabor Day celebration in October. Mr. Williams participated in the organization and management of several air transportation companies, mainly the Aviation Corporation. He has long been connected with such companies as H. J. Heinz and Philco, helping them establish foreign manufacturing plants. He is a member of the Council of the American Manage-

ment Association and the United States Executive Committee of the International Electrotechnical Commission. He is also president and director of the Drexel International Economic Council of Philadelphia.

The Wall Street Journal of November 23 quoted **F. Steele Blackall, Jr.**, President of Taft-Peirce Manufacturing Company of Woonsocket, R. I., regarding the upturn in inquiries and general business conditions. This must have given our Fred much satisfaction. . . . A good picture had been received of **Samuel S. Seegal** of Brookline and is captioned "Vice-President of the American Cancer Society's Massachusetts Division." . . . In a report from **Parke Appel** about the 1922 Faculty Chair, our re-elected president has enclosed an interesting memorandum concerning Professor John Wulff. This brings out Dr. Wulff's major interest in teaching undergraduate students. His newest venture is the development of freshman seminar programs, one of which is the study of a development of superconducting materials. In M.I.T.'s Engineering Notes of November, Dr. Wulff is pictured while lecturing upon the structure of crystals with the following comment: "In the fall of 1960 Professor John Wulff and a group of his students in the Metals Processing Laboratory discovered, while working on problems of crystallographic dislocation, that certain systems of molybdenum-rhenium, when severely cold-worked, exhibit extraordinary properties of superconductivity. Unheralded at the time, this discovery now appears to have important implications for both theoretical and applied metallurgy. Soon after the initial discovery, Professor Wulff established a full research program on the superconductivity of pure metals, of refractory metal solutions and of refractory metal intermetallic compounds." We are most complimented to have such a great teacher as the recipient of the 1922 Chair.

Among the new addresses received are **Clyde A. Benson**, Old Tappan, N. J.; **George C. C. Maling**, Ridley Park, Pa.; **Francis P. Sammet**, Meriden, Conn.; **Henry M. Schley**, West Palm Beach, Fla. Regards to you all.—**Whitworth Ferguson**, Secretary, 333 Ellicott Street, Buffalo 3, N.Y.; **Oscar H. Horovitz**, Assistant Secretary, 33 Island Street, Boston 19, Mass.

'23

Time is getting short. June will soon be here; if you haven't made plans to attend the 40th Reunion at Chatham Bars Inn let's get on the ball. . . . Dr. **Julius A. Stratton** has been named a trustee of the Pacific Science Center Foundation in Seattle. The foundation is planning to operate the United States Science Pavilion which was acclaimed as the outstanding exhibit of the Seattle World's Fair. . . . The following was received from **Fritz G. Clement**: "After 48 years, our firm, E. F. Hutton and Company, changed from a partnership to a corporation, and I thought you might be interested for the

records to learn that I have been made a senior vice-president and director of E. F. Hutton and Company, Inc. I am planning to take things easier in 1964 and spend more time at my place in Delray Beach, Fla., where I devote most of my time and energy to golf. Don't know whether I will be able to attend the 40th Reunion, because it comes at the same time as the U.S. Seniors' Golf Championship, which I won a couple of times, and of which association I am a director. Their tournament usually comes the first week in June, which will probably be the 4th and 5th next year. However, if I can arrange it, I hope to be at the reunion."

Members of our class still gravitate to the speakers' rostrums: **Ed McSweeney** spoke to the PIA-Canadian Graphic Arts Association in Montreal on October 1; his subject was "A Report On The Graphic Arts Industry in Japan." . . . **Ragnar D. Naess**, Senior partner of Naess and Thomas, Investment Counselors, addressed the New Jersey Bank's and Trust Company's business management conference in Patterson, N.J., on October 23. His subject was "Should You Buy Stocks Now." . . . A note from **Peter Petersen** of Bergen, Norway, says that he is currently establishing a fishing industry venture in Chile. . . . A note from **Reg H. Peene**, now a retired man of leisure, says that he and Mrs. Peene have been doing quite extensive traveling the past few years, including our own country and Canada, the Seattle World's Fair, the Hawaiian Islands, Spain, Portugal, and Scotland. We sincerely hope, Reg, that your travels will bring you to our 40th Reunion in June.

We regret to announce the death of Major General (Ret.) **William G. Manley** on October 25, 1962, in Jacksonville, Fla. General Manley was also a graduate of Annapolis and transferred from the Navy to the Marine Corps in 1924. Before World War II he served in China, Puerto Rico, Nicaragua, Egypt, Honduras and Hawaii. He held the Air Medal for achievement in the Solomon Islands and the Legion of Merit for work in the South Pacific area during World War II. . . . We wish to announce the following address changes: **Max Maltzman**, 1458 San Ysidro Drive, Beverly Hills, Calif.; **Albert S. Redway**, 17 Old Orchard Road, North Haven, Conn.; **George K. Shands**, 2129 Florida Avenue, N.W., Washington, D.C.; **Phra Bisal Sukhumvid**, Sala-daeng House, 5 Silom Road, Bangkok, Thailand; **Chaplin Tyler**, 3209 Swarthmore Road, Westmoreland, Wilmington 6, Del.; **Gerald L. White**, 1245 Sherbrook Street, W., Montreal, P.Q., Canada.—**Herbert L. Hayden**, Secretary, E. I. du Pont de Nemours and Company, Leominster, Mass.; **Albert S. Redway**, Assistant Secretary, 17 Old Orchard Road, North Haven, Conn.

'24

This is the season when some of you are lolling on tropic sands, some are traveling to exotic places, but the majority of us are shivering through another

winter and wondering if spring will ever come. **Dave Evans**, commuting from New Canaan to New York, is one of the latter, but it doesn't seem to bother him: "We just go along happily, Myra and I," he says, but that letter was written just before the first real cold spell hit us in December. The Evanses have two married daughters who have presented them with seven WONDERFUL and BEAUTIFUL grandchildren. The capitalizations is Dave's. Their third daughter, Daryl, is in Boston working with an opera group, a branch of New York's Met. "She is quite a good musician on the piano herself and is now the girl Friday of a group of about six who run the thing. She worked a year in San Francisco after Skidmore, and saved enough money to take a trip around the world." Sounds as though Daryl has the Evans' energy.

Bill Delehanty seems to be in a position to duck out if things get too rugged in New York. His firm of Chapman, Evans and Delehanty, Architects and Engineers, has work going all the way from upper New York and Maine down to Florida and Bermuda, "so you see the partners at times are able to enjoy a bit of a vacation while away on business." And as a senior partner, we're sure Bill doesn't pick the Maine job at this season. His office employs about 70, and does a great deal of school and college work. "Our office is not a segregated one, as I notice we have on our boards Lutheran, Catholic, and Episcopalian work, and believe it or not, a school for the Quakers and lo and behold, we are doing a job for the Presbyterian Hospital." Sounds like a very catholic clientele with a small "c." . . . **Dr. Ernst A. Guillemin** probably is not concerned in the least about weather. His major interest is in solving insolubles. Ernie has just started a new firm, Guillemin Networks, Inc., in Newton, Mass., specializing in development and manufacture of electrical filters which incorporate modern network synthesis theory and technology. The publicity release quotes him as saying "future products of the firm will reflect solutions to filter problems some of which have in the past been considered 'insoluble'." If you are one who believes only youngsters have the mental agility for this sort of thing, change your thinking. Ernie and Stark Draper, '26, are two venerable gentlemen who make it a habit.

Nobody knows, including himself, where **Hank Simonds** will be at this moment. After three months' vacation he was taking off again just before Christmas for foreign parts. By now he could be in the South Pacific or, just as probably, pushing through an ice pack. He may not choose his winter resorts, but at least they're varied. . . . **Clarence Redden** left the Maine winters behind some years ago for the more temperate climate of Pennsylvania. As the storm paths seem to have chosen more southerly routes recently, it is not apparent that this was a good exchange. He was here in Cambridge last spring with his daughter, then a junior in high school, who was giving serious thought to an M.I.T. education. It is not known to your secretary

whether the thought was followed by action, but if she does come here next fall, she'll have a beautiful place in which to live. The exterior of the women's dormitory is now completed, and the interior work is well under way. All coeds starting with this year's class will be housed there next fall. And while it's the thing to say around the Institute, "the coeds are getting better looking every year," we had some real charmers in our day, too. You remember them as well as your secretary does.—**Henry B. Kane**, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

Although our 40th Reunion is still two and one-half years away, it is not too early to begin to think about it. This is quite apparent when you realize that the 40th Reunion Gift Committee held its first meeting at the M.I.T. Faculty Club on Friday, December 21. Co-chairmen of this Committee are **Sam Spiker** and **Mac Levine**, backed of course by **Chink Drew**, our Alumni Fund Class Agent, and **Fred Greer**, the Class President. Meeting with this group were your secretary and **Chick Kane**, '24, the Alumni Fund Director. . . . **Charles Cooper** is one of our regular visitors at M.I.T., since his work with the DuPont Company brings him here periodically; it is always a pleasure to have him drop in for a short discussion on these occasions. . . . In the news from the West Coast, Astoria, Ore., we find that Rear Admiral **Thomas J. Killian** of the Naval Reserve was the featured speaker on October 27 at the Navy Day Dinner held at the Astoria Country Club. Tom's headquarters are now on the West Coast where he is assistant to the president for science and engineering at Seattle Univ. In his appearance, he was to discuss the War College and Naval Research.

It was noted in a recent issue of the Boston Herald that **Garfield A. Drew** has been elected a member of the board of directors of the Technical Fund, Inc. Garfield is president of Drew Investment Associates, Inc. of Boston, publishers of the weekly Drew Odd Lot Studies. . . . Probably many of you read the interesting article entitled "The Impatient Shoemaker" which appeared in the November 23 issue of TIME. The article, of course, referred to **Maxey Jarman** who, to quote the article, the psychologists said was bound to fail. If you have not seen the article, I suggest you look it up in the library, because it is interesting reading, and you will find a recent picture of Maxey is the chairman, is shown by the An indication of the magnitude of Genesco, Inc., of Nashville, Tenn., of which Maxey is the chairman, is shown by the fact that last year profits were \$8,900,000 on sales of \$443,000,000. . . . Among the several address changes which passed over my desk during the past month, there is one for "**Weih**" **Weihmiller** whose address has changed from Islip, N.Y., to 8903 Hempstead Avenue, Bethesda, Md.—**F. L. Foster** Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

'26

There's a dusting of snow and fine flakes are still falling this Sunday morning before Christmas here at Pigeon Cove. Until we get the 8:30 weather report, we will not decide whether to hustle Heidi into the back seat of the old buggy and dash back to town. Heidi had her seventh birthday recently and she prefers to lie with her nose toward the fireplace than to lie in her doghouse with her nose sticking out gathering snowflakes. As I write she reminds me of this with an occasional gentle roar. The radio report indicates that the snowfall will be light, so I can settle back to the notes. . . . **Pink Salmon** and I recently received a nice letter from **Jim Killian** addressed to the class as well. As class representatives, we extended well wishes to Jim as he recovered from his recent illness. We will be pleased to send a copy of Jim's letter to any of you if you will send a postcard to the class secretary. The Killian rhetoric will even make **Tom Green** envious (no pun intended). We are happy to report that Jim is once again in fighting trim. . . . **Ben Margolin** recently got the habit of writing to your class secretary. His first letter contained a story about **Dick Pough** and his activities in conservation of natural resources. Unfortunately we had just written a story about Dick which had not yet been published in the notes and we could not use Ben's letter. That did not discourage him and he has written again: "Dear George, Here are some new vital statistics for a couple of our class notes. **Chet Buckley** has been named president of American Gage and Machine Company. Before joining its Standard Transformer Division, he was with F. Buckley and Associates, Consulting Engineers; prior to that he was manager of manufacturing for National Silver Company in Taunton and prior to that with Taunton Electric Light. His daughter, Barbara, Mrs. Holdridge, is the mother of Chet's first two grandchildren, a boy and a girl. His loyalty to '26 and M.I.T., I'm sure you know all about. . . . **Phil Mancini**, also our classmate, is now traffic commissioner for the State of Rhode Island and before that was Commissioner of Public Works. He has four children: one—Philip, Jr.—married and a graduate of the University of Rhode Island; Stephen, a senior at the University of Rhode Island; and a handsome boy and girl, who, you recall, were at the 35th with his wife, Kathy, and Phil. Perhaps you can pry out of Phil his accomplishments as an office holder of the International and National Traffic Engineering Society. I know he's been very active, but he has never opened up with me. Sincerely, Ben." From the clipping Ben sent us we quote: "Chester F. Buckley of Warren has been named president of American Gage and Machine Company, Chairman Wallace E. Carroll announced today in Chicago. Buckley joined American Gage in 1957 as president of its Standard Transformer Division, 140 Dana NE. He later was named

vice-president of American Gage. The popular Warren industrialist is also president of the following American Gage affiliates: Elgin Transformer Company, Elgin, Ill.; Laminated Metals, Inc., Providence, R.I. and Southeastern Transformer Company, High Springs, Fla." Felicitations to Chet and Phil and thanks to Ben for keeping us posted.

Another letter just arrived from the mountains of Vermont from none other than one **Emerson W. Eddy**: "Dear George: I left my soft New York City job about a year ago (Director, Market Research, Texas Gulf Sulphur Company, 32 years) to live in Vermont and work in 1,000 acres of timber I have been putting together over the last 15 years. No kids, and wife a working librarian, so it was possible. After this winter we will know better how we will 'make it.' Have four men, tractor and two horses working with me now and have removed 150,000 feet of logs, weeding and thinning—the best are left—selective cutting, etc. Hope you are fine. Please call the Alumni Office and give them my address, Ripton, Vt. Thanks, Wick Eddy." We thought Wick had retired but it sounds to us as though he was just starting to work! Lots of luck, Wick; we hope you get lots of lucre out of them thar logs. . . . **Sid Baylor**, you will recall, is now living in Vermont but still running his Eastern Appliance Company business in Cambridge in spite of advice from all of his friends that it couldn't be done. . . . Another classmate, a born Vermonter, **Charles Rich**, went back there about 25 years ago to run the family lime business and to raise a family of girls—both of which he has done successfully. While I sit here writing class notes Ruth has a habit of reminding me of things that need doing—oil the furnace blower, fix the doorbell in Winchester, paint the casement window, deliver three Christmas presents. Therefore, before the list gets any longer, I'm going out to deliver those Christmas presents. My parting note—if Wick Eddy and Ben Margolin can write letters to the secretary, why can't you? Am I subtle enough? Cheerio until March—**George W. Smith**, Secretary, E. I. duPont de Nemours and Company, 140 Federal Street, Boston, Mass.

'27

Nathan Cohn, Vice-president, Technical Affairs, Leeds and Northrup Company, Philadelphia, was advanced to the presidency of the Instrument Society of America, at the society's annual meeting and, together with other officers elected, assumed his new post on November 1. Nat, who lives at 1457 Noble Road, Jenkintown, Pa., had served as president-elect-secretary of the society since the fall of 1961. The society's annual meeting was held in conjunction with its 17th Annual Instrument-Automation Conference and Exhibit October 15-18. A member of the Philadelphia Section of ISA since 1955, he has held a number of important posts in the society's national

structure, having served as vice-president of the Industries and Sciences Department, chairman of the National Publications Committee, and as one of a group of American automatic control specialists who represented ISA on an exchange tour of scientific institutions and industrial establishments in Russia. While serving as chairman of ISA's Publications Committee, he instituted, with financial support from the National Science Foundation, the publication by ISA of cover-to-cover English translations of four major Russian technical journals in the instrument and automatic control field, this work now being in its fifth year. He joined Leeds and Northrup in 1927, holding positions of increasing responsibility and being elected to his present post in 1958. He is a member of a number of professional societies, the author of many published technical papers dealing with the generation and transmission of electric power, and the holder of several patents in this field.

It is with regret that we record the deaths of the following: **Saul Peraner**, of 12 Kilsyth Terrace, Brookline, Mass., on September 18, 1960, and **David R. Barnett**, Box 712, Shingle Springs, Calif., on December 14, 1961. We have no details on these.—**J. S. Harris**, Secretary, Shell Oil Company, 50 West 50th Street, New York 20, N.Y.

'28

Fred Lewis, X, who was a division head at Esso Standard Oil Company in Everett, Mass., has joined the engineering staff of Jet-Vac Corporation, an affiliate of Artisan Industries. Fred held, progressively, various positions at Esso from the time of graduation until the plant was permanently closed last July. During the war, he served with the Army Chemical Warfare Service. Fred has always been active in civic affairs. At present, he is chairman of the Alumni Fund group for his town of Arlington, Mass. . . . Florence and **Ralph Joje** received an announcement of the wedding of Tamara Holly Melcher to Forrest Warden Myers on Saturday, September 1, 1962. Holly's dad, of course, is our good classmate, **John C. Melcher**. John is a section head with the Market Development Division of Leeds and Northrup Company, Philadelphia. Before moving to Philadelphia, John was with the Boston office of his company for many years. . . . **Dick Hoak** is in print again, this time as co-author of a paper on "Design Criteria for Sedimentation Basins." This was a contribution from the Mellon Institute which appeared in *Industrial & Engineering Chemistry Process Design and Development*, July, 1962. In addition to his publications, Dick is active generally in professional societies.

Your classmate, **Daniel L. Edlund**, III, represented President Stratton and M.I.T. at the inauguration of Muskingum College's new president on November 2. . . . Connecticut General Life Insurance Company announced that **John Stack**, Vice-President and Director of

Engineering for Republic Aviation Corporation, had been named to the advisory committee of the Connecticut General Flight Forum. Flight Forum, a public service activity, was initiated in 1961 with a national symposium on "The Issues and Challenges of Air Transportation." A second symposium is planned for May, 1963, on the implications of new technology for transportation. . . . Even at the early date of this writing, **Art Nichols** and his competent committee are diligently at work to make your 35-year reunion, June 7, 8, and 9, at Harwichport, the very best possible. Don't let this one slip by! Send your reservation in right away and get set for a weekend you will always remember! . . . We regret to announce the death of our classmate **Homer B. Huntoon**, IV, on May 8, 1962. Homer's address was 2301 Sharon Way, Reno, Nev.—**Walter J. Smith**, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.; **George I. Chatfield**, Secretary, 11 Winfield Ave., Harrison, N.Y.

'29

We learn from the Hartford, Conn., press that **Bill Young** has acquired controlling interest in the New Haven Heat Treating Company of that city. Under the new ownership, Bill will be president. The company specializes in annealing, bright tempering, case and scale free hardening and nitro carburizing of steel tools. Bill received his degree in metallurgy, and for the past several years has been consultant for the Hartford Gas Company and the Quebec Natural Gas Corporation of Montreal. . . . **Hunter Rouse** delivered a paper before the October meeting of TAPPI at the Queen Elizabeth Hotel in Montreal. This paper was part of a technical session on fluid mechanics, and was entitled, "On the Role of Eddies in Fluid Motion." Hunter is director of the Institute of Hydraulic Research at Iowa State University.

Though I never expected to be reduced to reporting changes of address, the following have come from the M.I.T. Register recently: Colonel **Richard Z. Crane** has moved from Watervliet, N.Y., to 126 Crestwood Lane, Harbor Bluffs, Largo, Fla.; **Wendell R. Holt** from Los Angeles to 120 West 86th Street, New York City 24; **Arthur B. Marlow** from Des Plaines, Ill., to 992 South Oakland Avenue, Pasadena, Calif.; **Arthur B. Marsh** from Gillette, N.J., to P. O. Box 405, Millington, N.J.; **Frank O. Pierson** from Charlotte, N.C., to Apartment 152-A, Wallworth Park Apartments, Cherry Hill, N.J.; and finally, **George E. White** from White Plains, N.Y., to Boulder Brook Road, Greenwich, Conn.—**Fisher Hills**, Assistant Secretary, 62 Whittemore Avenue, Cambridge 40, Mass.

'30

We recently spent a very pleasant evening with Ruth and **Jack (Allen) Latham**, who were in New York to at-

tend the ASME meeting. As many of you know, Jack is senior vice-president of Arthur D. Little, Inc. The division he supervises is concerned with the design, development and sale of research equipment in such fields as cryogenics and pyrogenics. The Lathams' four children are all science-oriented: William Nichols (Nick) '58, has a B.S. and M.S. from M.I.T. in mechanical engineering and is working on superconducting magnets at AVCO Research Division in Everett, Mass. He is married and has two sons. Harriet, '61, has a B.A. from Swarthmore and M.S. from M.I.T. in biochemistry. She has twice acted as a guide at U.S. trade exhibits in Russia, speaks fluent Russian, and has ridden the trans-Siberian railroad as far East as Irkutsk. At present she is doing research on tissue culture and virology at M.I.T. and working toward a Ph.D. David, '61, has a B.S. in mathematics from M.I.T. He is now teaching and working toward a Ph.D. in astrophysics at Harvard, dealing with such esoteric matters as mathematical models of variable stars. He is married and has one son. The fourth of the second generation Lathams, Tom, is a junior at Caltech. Jack is involved in many extra-curricular activities. He is an avid sailor, owner of the 42-foot "Palometa" and commodore of the Boston Yacht Club. He is also chairman of the board of trustees of the Congregational Church in Jamaica Plain and has been contributing his engineering services to various medical research programs. . . . **Earl Krall** is national director of statistics for the Boy Scouts at National Council headquarters in New Brunswick, N.J. He has two sons: Martin, who graduated from Rutgers and is now at Yale Law School; and Charles, who is a senior at Carson Long Institute. Earl has served as secretary, treasurer and president of the N. B. Lions Club and chairman of the parents' council of the N. B. public schools. He is a board member and chairman of the Teenage Activities Committee of the Jewish Community Center. . . . **Bill Jackson** is president of Pittsburgh-Des Moines Steel Company, and a director of the Pittsburgh Theological Seminary and the Dollar Savings Bank. His son, Bill, Jr., graduated from Iowa State with an M.E. and works for Pittsburgh-Des Moines. Daughter Polly, a Smith graduate, is married and has two children. Daughter Mary is attending the University of Arizona. . . . **George Kloote** is chief engineer of Evans Products' Haskelite Division in Grand Rapids. He has three sons including one University of Michigan graduate, one Michigan State graduate and one student at Michigan State. . . . **Paul Kimberlin** is senior engineer in charge of materials handling equipment for Inland Steel Company at East Chicago. He has one child, Kenneth, who is 11. He mentioned having recently seen **Bob Lytle**, who is superintendent of power at U. S. Steel's Clairton Coke and Steel Works. . . . Changes of address: **Lawrence N. Gonzalez**, American Embassy, APO 292, New York, N.Y.; **Ralph W. Peters**, 68 Village Lane, Rochester 10, N.Y.; **Ralph E. Scott**, 5702 W.

Ridgewood Drive, Parma, Ohio.—**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York 36, N.Y.; **Ralph W. Peters**, Assistant Secretary, 68 Village Lane, Rochester 10, N.Y.; **Louise Hall**, Assistant Secretary, Box 6636, College Station, Durham, N.C.

'31

A release from the U. S. Department of Labor recently announced the appointment of **Francis Gregory** as assistant director for Manpower Development of the Labor Department's Office of Manpower, Automation, and Training. Francis has served since 1951 as assistant superintendent for Industrial and Adult Education of the public schools of the District of Columbia and is also chairman of the Superintendent's Committee on Human Relations. In his new position he will be responsible for promoting the training and retraining of the unemployed and underemployed in the nation's work force. . . . **John Ness**, of Augusta, Maine, has been promoted from rate engineer to manager of the Rate Department of the Central Maine Power Company. He joined CMPCO as a domestic appliance salesman in Lewiston in 1933, has served as a commercial equipment salesman, a lighting specialist in power and lighting sales, Bucksport manager, and, since 1947, rate engineer. . . . Those of you who read The New York Times on October 4 saw a familiar face on the financial page. Our prexie, **Howie Richardson**, had been elected vice-president of General Dynamics. . . . Another release tells that **Don Stearns**, Senior Partner of Stearns and Wheler, retired on September 15 from active participation in the firm, which he founded in 1950. . . . Recently, I had a very pleasant surprise when **Gordon Speedie** dropped in to say hello. It's been altogether too long since we've had a chance to have a good old bull session, and if Gordon enjoyed it half as much as I did, I am very lucky. We replayed the tape recording of the radio broadcast on our 25th Reunion . . . and wondered if our opinions have changed since then. More on this later. Gordon is a management consultant—and seems to be thriving on the work. . . . And now, it's my sad duty to report the death of Captain **Ralph S. Feola** on September 21, 1962; **Hyman I. Friedman**, who passed away on June 3, 1962; **Walter J. Paltz** on November 25, 1962, and Commander **Otis A. Sibley** who died suddenly on November 20 at his home in Green River, Brattleboro, Vt. . . . **Marcel Aillery** tells me he is the father of another girl, Susan, 4 months. Marcel now has five children, two boys and three girls, the oldest of whom is 9 years.

New addresses reported are **Charles B. Basinger**, R.D. #2, Parma, Mich.; Colonel **Fred J. Elser**, 1399 Tamarisk Road, Palm Springs, Calif.; **Vito F. Cappello**, Gulf Oil Corp., P.O. Box 701, Port Arthur, Texas; **Chauncey J. Hamlin, Jr.**, 1700 E. Imperial Highway, El Segundo, Calif.; Colonel **Harry D. Kamy**, Trans-

portation Material Command, 440 Countryside Drive, Florissant, Mo.; **Soichi Kawazoe**, 98-01-67 Avenue, Forest Hills, N.Y.; Professor **Charles H. Norris**, M.I.T., Room 1-163, Cambridge 39, Mass.; Colonel **Charles Robbins**, C. B. R. Agency, Edgewood Arsenal, Md.; **Samuel G. Ryan**, 14-2nd Street, Staten Island 6, N.Y.; **John E. Spalding**, The Oaks, Hartford City, Ind.; **Morley G. Taylor**, 276 St. James Street, W., Montreal 1, Quebec, Canada; and Rear Admiral **Arnold E. True**, 300 Alpine Creek Road, La Honda, Calif.—**Edwin S. Worden**, Secretary, 35 Minute Man Hill, Westport, Conn.; **Gordon Speedie**, Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.

'32

A note from **G. Robert Klein**, XV, tells us that he is president and general manager of the Klein News Company, Cleveland, Ohio, which is distributor for periodicals and books for metropolitan Cleveland and 12 counties in N. E. Ohio. He writes, "Daughter Judy graduated from Wellesley last June and was married to John Keller. She is now at Boston University getting a master's degree, and her husband is at Harvard Business School. Son George is at Colorado College, Colorado Springs, and daughter Marilyn is at Laurel School in Cleveland. Our address is 23699 Shaker Boulevard, Shaker Heights 22, Ohio. Regards to all." . . . **Sidney B. Jeffreys**, VX, President of the Jeffreys Engineering and Equipment Company, sponsored a Machine Tool Show in Greensboro, N. C., in conjunction with the opening of the firm's new building. The show received high praise for its benefit to this growing industrial area. . . . **Thomas T. Amirian**, IV-A, will be the guest lecturer at a series of lectures and discussions on Armenian history being held by the Boston branch of the Armenian Students Association of America. For those in the area who may wish to get in touch, Thomas is a consulting engineer with offices in the Park Square building and lives at 70 Summit Avenue, Brookline 46, Mass. . . . A news note informs us that Professor **Rolf Eliassen** is directing a research program undertaken by Stanford University and the city of Palo Alto under a U.S. Public Health Service grant to demonstrate the feasibility of converting and re-using sewage effluent and waste water for irrigation and other uses. Population increases and water pollution, Rolf points out, make it increasingly important that we conserve all available water resources and seriously explore conversion processes.

From news accounts of November's elections we learned that **J. Richard Rafter** has been editing the Providence, R. I., Engineering Society's journal and seeking re-election as town councilman. Perhaps he will read this and let us know how it came out. Recent appointments list **Michael Anthony** as manager of Nuclear Products Group in the Metals and Controls Division of Texas Instruments at Attleboro, Mass. He joined the com-

pany in 1958 after having been production manager for Rem-Cru Titanium, Inc. and production supervisor for Remington Arms. . . . The Harvard Medical School lists Dr. **Harry Shwachman** as associate clinical professor of pediatrics and chief, Laboratory of Clinical Pathology—and he took time to attend the 30th Reunion with his wife and three children. . . . Classmates presenting papers recently include **William H. Radford**, Professor of Electrical Communications and Associate Director of Lincoln Laboratories, M.I.T., who discussed "Communications and Radar for Deep Space" at the NEREM Convention in Boston. . . . **Manley St. Denis**, staff member of the Naval Warfare and Analysis Group, of the Department of Naval Architecture and Marine Engineering, M.I.T., presented a seminar on "Some Operation Aspects of Ship Systems" at M.I.T. Next month I hope to find space to list the members of our class who are engaged in the many M.I.T. Alumni activities in addition to class activities to acquaint you with the breadth of involvement of the Class of '32 in M.I.T. Alumni affairs.—**Elwood W. Schafer**, Secretary, Room 10-318, Ext. 621, M.I.T., Cambridge 39, Mass.

'34

Now that the holidays have faded into the distance and everything seems to be back to normal, perhaps you can all lean back and get brought up to date on some of our classmates' doings.

This month we received news from Jackson, Mich., that **Wilfred D. MacDonnell**, former president and chief executive officer of Great Lakes Steel Company, joined Kelsey-Hayes, Inc., Romulus, as vice-president on September 1. Kelsey-Hayes has two plants in Jackson. Wilfred was in our class and has a degree in metallurgy. . . . An article concerning the Canaveral Laboratory written by **John B. d'Albora, Jr.**, appeared in the Bell Laboratories Record November, 1962, issue. He is the resident technical director of the laboratory, and this title indicates that he has overall responsibility for the Cape Canaveral Laboratory. The technical and administrative staff of the laboratory is made up of 21 laboratory employees, 12 field engineers assigned by Western Electric, and 28 resident visitors who provide the basic plant, procurement, mechanical, electric shops, and the clerical services. At the present time this group has been increased by engineering and administrative personnel concerned with the Telstar communications satellite project. The Thor-Able missile guidance was accomplished after extensive testing by the Cape Canaveral Laboratory group. The article is most interesting, and would be well worth reading for any of us. Congratulations to Mr. D'Albora on the fine job he and his group are doing toward our nation's defense mechanism.

Word comes from General Electric Company in Schenectady that **Hoyt P. Steele** was elected a vice-president of that company on October 21, 1962. He is

manager of the Antitrust Settlement and Litigation Operation with headquarters in New York, N.Y. The operation represents General Electric's interests on a continuing basis in matters growing out of cases brought against the company in Philadelphia in 1960. These matters include damage suits brought by or on behalf of all classes of customers, other directly related legal actions, and customer relations aspects of such cases. Congratulations, Hoyt. . . . Our deepest sympathy goes to Mrs. Roberta J. Nowell, wife of **Ed Nowell**. Ed, who had been quite ill for the past year or two with a liver disease, died on November 2, 1962.

I received the following letter from **Henry N. Andrews Jr.**, who resides here in St. Louis: "In company with a couple of other botanists I spent a month last summer on Ellesmere Island in the Canadian Arctic searching for Devonian age plants—dating back some 300 million years. Our primary objective was a group of fern-like plants that seem to offer some clues to the origin of early seed plants. Although we are just beginning to dig into our collections it looks as though we will be able to contribute a little to the story. We spent most of the month at the head of a fiord some 200 miles north of the Resolute Bay weather station. It is a barren and desolate country with only a few caribou, Arctic hares and seals for company—and one polar bear, but it does grow on one and we hope to return." . . . This about does it for this month. Keep sending in news notes to any of us. They are appreciated.—**Harold E. Thayer**, Secretary, 415 West Jackson Road, Webster Groves 19, Mo.; **G. K. Crosby**, Secretary, International Nickel Company, 67 Wall Street, New York 5, N.Y.; **J. P. Eder**, Secretary, 1 Lockwood Road, Riverside, Conn.; **Malcolm S. Stevens**, 9 Glenfield Road, Barrington, R.I.

'35

Ned Collins, our Regional Secretary in Chicago, is really building some fires and getting some interesting letters. Your efforts are much appreciated by all of us, Ned, and the three letters received before the deadline follow: **Jack Colby** wrote: "I was in Boston for Thanksgiving and had a luncheon meeting on Friday with Leo Beckwith, Gerry Golden, Irv Banquer, Bob Forster, and Dave Cobb. Leo organized the luncheon to discuss our 30th Reunion plans. At our 25th Reunion it was suggested we look into the possibilities of chartering a cruise ship for a cruise in the Caribbean. I was given the job of looking into the matter and made my report at the luncheon. Everyone was very enthusiastic about the possibility and a notice will be going out very soon to see if we can drum up enough interest in what should be a fantastic vacation combined with the reunion.

"All is well in the Colby family. I am still vice-president and general sales manager of the Johnson Service Company. My oldest son, Richard, is now a

sophomore at Yale and my middle son, Chris, is a junior at Phillips Exeter Academy. Our house seems rather empty with only the youngest boy still at home. I have been doing a great deal of traveling recently, both in the States and in Europe. We are in the process of establishing a manufacturing plant in Italy which will manufacture for the Common Market. We already have our own companies in England, France, and Switzerland. We are very enthusiastic about the potential of the European market in the years to come." Many thanks for your letter, Jack, I am sorry other commitments prevented my getting to the meeting. The proposed 30th Reunion plans sound wonderful. By the time this is printed, we may have a fair idea how many might be interested in it. Incidentally, Ned Collins was in Boston over Thanksgiving and would have attended the meeting if he had known about it.

Bill Keefe wrote to Ned Collins from Bettendorf, Iowa, and we thank him for his letter which follows: "I have been on the M.I.T. Educational Council for the last five years for the Davenport Area. The executive secretary of the Council does an excellent job in keeping us up to date on M.I.T. so that we can talk intelligently to prospective M.I.T. students. I have enjoyed interviewing these boys who have to be outstanding to meet the stiff competition for admission to M.I.T. As a salesman for M.I.T., however, I have not always succeeded. My own oldest son graduated from high school last year. He was a National Merit Scholarship finalist and was accepted for admission to M.I.T., but he selected another college. I have been working for G. E. Company since I left M.I.T. in 1935. For the last nine years, I have worked out of the Davenport, Iowa, office. My principal activity is working with the electric utility customers in Iowa and Nebraska on technical problems associated with the generation, transmission, and distribution of electrical power. I am called an electric utility application engineer. I have been active in A.I.E.E., and was the chairman of the Iowa-Illinois Section. I have, occasionally, met M.I.T. classmates at A.I.E.E. national meetings. **Clark Nichols** is frequently at the meetings in New York and Chicago. I have bumped into **Carl Boytano** at New York a few times, and I met **Perry Ware** at a meeting in Montreal and accompanied him on the plane back to Boston. I get back to Boston two or three times a year for short visits. Best of luck in your efforts to extract some news from our classmates in this part of the country."

Our third letter is from **Art Linn**, who lives at 6541 44th Avenue, Kenosha, Wis. He wrote to Ned Collins as follows: "This responds to your letter of November 13, 1962. It's a last resort type reply suggested in your last paragraph. For instance, having been out of school as long as I have, I've not only forgotten most of what I learned, but even where I went to school. So, I assume we're '35 classmates from M.I.T. The reason for this assumption is that my high school alumni association, knowing I've forgotten, always works in a commercial and, I suspect, my

grammar school has long ago collapsed in hallowed ruins. Granting the validity of the assumption (Oh, shades of Freshman Calculus!), here are a few nuts and bolts: My wife, Doris, and I have just celebrated our 24th wedding anniversary. We have five children, two of whom (Barbara and David) are now married. Of the others, Sandra (Dave's twin sister) is working as a secretary for an electronic firm in Milwaukee and Deborah and Martha are in, respectively, the seventh and fifth grades of St. Marys School, Kenosha. Barbara, (married name Hannes) has a son, Kevin Lee, just turned one year old, our first and only grandchild thus far. Dave heads up the Stationery and Printing Department of American Motors, Kenosha Plant, and is doing very well for a fellow who categorically refused to go to M.I.T.

"As far as 'Ol Dad' is concerned, I represent Metals and Thermit Corporation in Wisconsin and Minnesota. My principal concern is with M & T's activities in tin, chemicals (organic, inorganic) and their fields of application (plastic stabilizers, foam catalysts, ceramics, flame retarders, etc.). We also have strong interest in the metal finishing field, specifically, electroplating and organic coatings (plastisols, organosols, etc.), but in this area, I'm concerned mainly with plating. Believe me, it's a life's work! I'm immediate past-president of the Milwaukee Branch of the American Electroplaters' Society and, as such, now sit in honored glory on the board of managers. Milwaukee was host to the National A.E.S. Convention in June of this year, and I was on the Steering Committee. We were famous for a good technical program and a real 'blast' of an annual outing. I'm a member of the local M.I.T. Club, but I must sadly admit, that's all I can say in this connection. So, then, here's hoping this may be useful to you. Best of luck in your secretarial assignment and cordial Season's Greetings!"

It is good to hear from you, Art, and I hope you and Ned can make connections. Ned's reply included some news of his own past activities that I felt you would all like to hear about: "In my nursing home activities, I have had occasion to be in Kenosha, and you can rest assured that I will look you up on my next visit. I notice that your main office is in East Chicago, Ind. This again brings out how closely our paths have been crossing. I formed a company in 1957 and until a little over a year ago my offices were located in Hammond, and I built several buildings in East Chicago. In fact, I called upon your outfit a few times, although was never successful in getting a job."

We had a request from **Dave Sullivan** for one of the 25th Reunion Class Books so I took the occasion to talk to him on the telephone. He lives in Belmont, which is also headquarters for his manufacturing representative business. He has been at this work for the last 15 years and handles Ardmore Textured Metals, Guardian Products Corporation's Coupling Division, and Koven Steel swimming pools and supplies. Write to Dave at D. U. Sullivan Associates, Box 104,

Belmont 78, Mass. The class book was mailed, and I hope he is enjoying it. . . . **Arthur R. Anderson** of Tacoma, Wash., represented President Stratton and M.I.T. at the inauguration of the new president of Pacific Lutheran University in Tacoma, on November 8. . . . **Bill Cross** was on another of his business trips to Europe in November and December. He is vice-president of Kimberly-Clark Corporation. . . . **David Buckwalter** is now with the White Pine Copper Company at White Pine, Mich. . . . **Dr. Thonet Dauphine** now lives at 1969 Highland Drive, State College, Pa. I hope when Professor **Robert Olsen** sees this news they can get together and both write to us. . . . I telephoned **Gerry Rich** to reactivate the West Coast region. He has been very busy at Stewart Engineering in Santa Cruz, Calif., where he is the general manager. Sales rose 75 per cent in 1962 over 1961. And now that we are well past the holidays, I hope more of you will find the time and energy to write.—**Allan Q. Mowatt**, Secretary, 11 Castle Road, Lexington 73, Mass.; Regional Secretaries: **Edward C. Edgar**, Kerry Lane, Chappaqua, N. Y.; **Hal L. Bemis**, 510 Avonwood Road, Haverford, Pa.; **Edward J. Collins**, 904 Merchandise Mart, Chicago 54, Ill.; **Gerald C. Rich**, 105 Pasatiempo Drive, Santa Cruz, Calif.

'36

A brochure from south of the border announces the 15th Annual Fiesta of the M.I.T. Club of Mexico City on March 7-9. Our class does not, as far as I can tell, have any members living in Mexico City, but **Vince Estabrook** is listed as holding the Club's Eager Beaver Award, indicating a four-time attender. If you can see your way clear to enjoying this unusual get-together and want more information, I am sure that Vince will be able to give you the low-down. . . . A letter from **Spence Mieras** gives us the latest on the doings of the president of the Warner Automotive Division of the Borg-Warner Corporation, and of his family. Here are excerpts: "I don't believe I have seen a single member of the class, except 'Bunk' Knudsen, since we finished. Recently, **Tom Nelligan** apparently came through Fort Wayne and called my home, but unfortunately I was somewhere else that day. . . . I have been with Borg-Warner for the last seven years and am responsible for their Warner Automotive Division and their Wooster (Industrial Hydraulics) Division in Wooster, Ohio. My wife, Marye, and I have three children: Neil, in his third year at West Point; Sally, a sophomore at University of Michigan; and our youngest, "Buss," a sophomore at Cranbrook School for Boys in Bloomfield Hills, Mich., where his older brother and I both were graduated. We live in Fort Wayne in the winter and at Lake Leelanau, Mich., near Traverse City in the summer." Warner Automotive makes automotive, industrial and farm equipment components; the Wooster Division makes hydraulic pumps, valves and accessories.

William I. L. Wu (see last month's notes) has been appointed director of research and development for the Singer Manufacturing Company. The newspaper account goes on to report that he had been chief engineer of Panoramic, an engineering program. During World War II, he worked on anti-submarine devices and radio countermeasures at Airborne Instruments Laboratory. He has done research work on picture-sound multiplex and television studies test equipment, and designed communications systems as chief engineer for the Fu-Chung International Corporation of New York and Shanghai. . . . Worcester Polytechnic Institute has announced the appointment of **Richard F. Morton** of Shrewsbury as associate dean of the faculty as of last September. Dick, Professor of Physics, has been director of Summer School and Evening Programs since 1959. In 1957, he directed the first Summer Institute for high school teachers, sponsored by the National Science Foundation, in Worcester. In 1958 and 1959, he served on the staff of the NSF in Washington while on leave from the college. During that time, he launched an In-Service Institute program for training elementary school science and mathematics teachers, and is a NSF consultant in science education. . . . **Sidney Speil**, who heads the Aviation and Missile Insulation Section of the Johns-Manville Research Center, is the man responsible for the development of the insulating materials used to protect the astronauts in all spacecraft manufactured by McDonnell Aircraft Corporation for NASA. We regret to report the death in 1961 of **Claude A. Taylor** of Pittsfield, Mass., and on November 26, 1962 of **Carl A. Mapes** who was vice-president and secretary of the C. H. Runciman Company of Lowell, Mich. . . . There are several changes of address to report: **Joseph S. Chenette**, 218 Heights Road, Ridgewood, N.J.; **Harold G. Holmstock**, 1600 Beacon Street, Brookline 46, Mass.; **Henry F. (Hank) Lippitt**, 321 South Mariposa Avenue, Los Angeles 5, Calif.; **Fred W. Meyer**, 33 Treehaven Drive, San Rafael, Calif.; and **William T. Royce**, 2600 Anchorage Avenue, Eastview, Calif., not San Pedro as we reported last month.—**Alice H. Kimball**, Secretary, 20 Everett Avenue, Winchester, Mass.

'38

We have belated information concerning the death of another of our classmates. **James B. Newlands** died in 1955. . . . A number of the class have completed papers: **Maurice White** was co-author of an article in Aerospace Engineering entitled "Critical Problem Areas of the Transport by Means of Piloted Simulators." . . . In the Allis-Chalmers Electrical Review, **Alfred Kilgour** is author of "Insuring Safe Operation," and co-author of "The C-Stellarator System." . . . At the IAS Large Booster Symposium, **Chauncey Bell** presented "Space Logistics—Technology versus Management." . . . **Frank Atwater**, Manufactur-

ing Vice-president for the Fafnir Bearing Company, has been given responsibility to co-ordinate manufacturing operations, to standardize product quality and specifications, and to develop methods for increased efficiency in the company's subsidiary and licensee plants. . . . **Robert A. Steel** has been appointed to the position of manager of the Whiting, Ind., laboratories of the research and development department of the American Oil Company. . . . **Frank Knight**, Division Manager of the Eastern Fine Paper and Pulp Division, Standard Packaging Corporation, has been appointed a director of the Merchants National Bank of Bangor, Maine. . . . **Russ Coile** is now director of research, Marine Corps Operations Analysis Group, at the Franklin Institute.—**David E. Acker**, Secretary, Arthur D. Little, Inc., 1424 Fourth Street, Santa Monica, Calif.

'39

From Edward R. Wayne, '26, comes this interesting note about a long-lost classmate, picked up by alert Mr. Wayne from a program note in Philadelphia: **Robert Wallace Pastene**, X, appeared in the play "In The Counting House" with a principal part, prior to the opening thereafter in New York. I'm adding this note from the Alumni Register: Bob lists his address as 42 West 53rd Street, New York 19. . . . **James S. Bruce**, X-A Grad, has been promoted by Eastman Kodak Company as director of the company's business and technical personnel department. Summarizing from the Kodak news bulletin, Bruce began his Kodak career in 1939 as an engineer in the paper service department of the Kodak Park Works. In 1952 he was appointed assistant superintendent of that department, and four years later was named assistant director of company training, subsequently being promoted to director of training in 1957. Originally from Winnipeg, Canada, Bruce received an A.B. from Washington and Lee University in 1937, and his M.S. from M.I.T. in '39. The Bruces, with their four children, live at 520 Oakridge Drive, in Rochester, N.Y.

Oberlin College has elected Dr. **John R. Brown, Jr.**, X-Grad, as a member of its board of trustees. Dr. Brown graduated from Oberlin in 1933, received his master of arts there in '35, and his Sc.D. from M.I.T. in '39. Living in Short Hills, N.J., he is director and vice-president for research and development of the Colgate-Palmolive Company, with his headquarters at 300 Park Avenue, New York 22, N.Y.

Charles M. Adams, XVI-Grad, appeared on the program of the fall meeting of the Metallurgical Society, held at New York City's Statler-Hilton. His paper: "Segregation in Rapidly Cooled Alloys." The single-line credit on the program listed Adams as representing M.I.T., although the current Alumni Register carries this notation: "Principal structures engineer, Applied R&D, Republic Aviation Corporation Farmingdale, N.Y." If

you'll update me, Charles, I'll gladly include the information in the next issue of the Class News. . . . From the Faculty Catalog of the Harvard Medical School comes this information of two '39ers: **Jerome Gross**, IX-A, received his M.D. from New York University in 1943, and currently is associate Biologist at Massachusetts General Hospital. He lives at 77 Dorset Road, Waban. . . . **Henry Coe Meadow**, VI-A, is associate dean for financial affairs of the Faculty of Medicine. He lives at Elm Street, Canton, Mass.

George L. Williams, XV-Grad, was recently elected vice-president of Metals and Controls Inc., a corporate division of Texas Instruments Inc. In his new assignment, he supervises all staff departments and the nuclear products group. M & C, Inc., is a leading manufacturer of solid and clad metal products in strip, wire, tubing, parts, and sub-assembly forms; and is also a major supplier of electrical and thermostatic controls. Its nuclear operation is the nation's largest privately owned nuclear fuel facility. . . . George joined M & C in 1953 as its treasurer. Prior to that, he was president, treasurer, and controller of Shawnee Pottery Company in Zanesville, Ohio. He also had been with the financial departments of General Electric and United States Steel.—**Oswald Stewart**, Secretary, 31 Birch Road, Darien, Conn.

'40

Bob Davis recently joined Hooker Chemical Corporation's international division as manager of operations. Previously Bob had been with the FMC Corporation as manager of international chemical development. . . . **Karl Feters**, who is vice-president of research and development of the Youngstown Sheet and Tube Company, is president-elect of the American Institute of Mining, Metallurgical and Petroleum Engineers. Karl is also a director of the AIME.—**Alvin Gutttag**, Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D. C.; **Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge, Mass.

'41

It has recently been announced that our Class President, **Edward R. Marden**, has been elected regional chairman of the M.I.T. Alumni Fund for Brookline and Chestnut Hill. Ed, who lives in Weston, is head of the Edward R. Marden Corporation, a construction firm located at 233 Harvard Street in Brookline, Mass. . . . **Franklyn W. Phillips** told the Armed Forces Communications and Electronics Association meeting in Boston that NASA's new Northeast Operations Office is now "open for business" at the former Arthur D. Little Building, 30 Memorial Drive, Cambridge. He reported that he is now in the process of

recruiting a staff which he hopes will be composed of New Englanders who know the area and who will bring more New England industry into NASA's man-on-the-moon project. This is the first such agency outside of NASA's moon project headquarters located in Houston, Texas. Frank was a speaker at the management seminar at the American International College in Springfield, Mass. The seminar was developed as a co-operative venture of the college and the Small Business Administration to aid area firms seeking government contracts. Franklyn discussed civilian space agency subcontracting programs as a key phase of the seminar material.

Edward G. Sherburne, Jr., Director of Studies on the Public Understanding of Science, in the American Association for the Advancement of Science, 1515 Massachusetts Avenue, N.W., Washington 5, D.C., is the author of an interesting and informative article entitled, "Science Curriculum Revision and the Technological Classroom" appearing in the October issue of the Science Education News published by the American Association for the Advancement of Science. . . . Dr. **James K. Tyson** has been named chief of the section on air and undersea warfare of the Operations Evaluation Group. OEG is the country's oldest operations research organization serving the armed forces, and has for 20 years conducted operations analyses for the Navy and Marine Corps in such areas of naval interest as undersea, air amphibious, nuclear, and electronic warfare, as well as strategic planning and logistics. It is part of the Center for Naval Analyses, a division of the Franklin Institute. Jim, a physicist, joined OEG's predecessor organization, the Anti-Submarine Warfare Operations Research Group in 1942. In OEG, he has been a member of the air and undersea warfare teams and has served as OEG representative with the Sixth Fleet and Task Force 60. He has also served with the Armour Research Foundation at the Illinois Institute of Technology, the Operations Research Office of the John Hopkins University, and has held the Chair of Physical Sciences at the Naval War College. He earned both his bachelor and doctorate degrees from M.I.T. in 1941 and 1948 respectively.

Professor **Fred T. Haddock** of the University of Michigan, Ann Arbor, Mich., is in the news again as providing one of the experiments scheduled to be aboard the first Polar Orbiting Geophysical Observatory (POGO) when it is boosted into orbit by a Thor-Agena launch vehicle from the Pacific Missile Range in early 1964. . . . **John F. Wilson**, 45 Hawthorne Avenue, Barrington, R.I., has been elected a vice-president of Metals and Controls, Inc., Attleboro, Mass., a corporate division of Texas Instruments, Inc. John will continue as group manager of the KLIXON electrical and thermostatic controls departments. He joined Metals and Controls in 1957 as general manager of marketing. In 1958 he was elected vice-president in charge of sales. He continued in this position until the Texas Instrument merger, at which time he be-

came group manager of the control devices product departments. He was previously general sales manager of the Cleveland Welding division of American Machine and Foundry Company; prior to that he was works manager of AMF's Leland, Electric division.

Professor **Morris Neiburger**, President, and **Kenneth C. Spengler**, Executive Secretary of the American Meteorological Society, attended the 209th National Meeting of that organization this fall in Asheville, N. C. . . . **Rita Marie Kelley**, M.D., of 123 Freeman Street, Brookline, Mass., is a clinical associate in medicine on the Harvard Medical School faculty. She is an associate physician at the Massachusetts General Hospital and has an office at 275 Charles Street, Boston, Mass. . . . **Norman C. Michels** has been elected first vice-president of the Association of Iron and Steel Engineers for 1963. He was treasurer of that organization in 1962 and is vice-president for facility planning and appropriations, United States Steel Corporation in Pittsburgh. He has been associated with U.S. Steel since 1941, except for a brief period during the late '40's.

We are sorry to announce the death of Colonel **James T. Seaver, Jr.** who served as vice commander of the USAF Air Weather Service at Scott AFB, Ill., from November, 1959, to July, 1960. He died in October in Washington, D.C., after a long illness. He attended M.I.T. as a meteorological cadet and was commissioned a second lieutenant in July, 1941. —**Walter J. Kreske**, Secretary, 53 State Street, Boston, Mass.

'42

I was in Baltimore the end of November and called **Charlie Speas** to see if he had any notes regarding our classmates. Charlie's news was indeed unhappy; he told me that **Eddie Wing** had just died. Subsequently, Charlie wrote to me about Eddie, and I would like to quote parts of his letter here. "When Eddie Wing accepted the nomination for president of the M.I.T. Club of Baltimore last spring, I felt sure that we were at last back on the track. Eddie thought it over very carefully before accepting because he was already dedicated to his business, church, P.T.A. and other community activities. He was one of those enthusiastic, tireless people who make a success of everything they undertake, so you can see why Eddie's death has come as such a shock to those of us who knew him as a friend. We will carry on, but we will miss him very much for a long time." Eddie was a partner of the Baltimore architectural firm of Cochran, Stephenson and Wing. Among the buildings designed by the firm, for which Eddie had major responsibility, are the Johns Hopkins Medical Residence Hall, the Edgewood Elementary School and the Flaghouse Court Housing Project. He was a respected member of many professional organizations and clubs. His survivors include his wife, Laura, a daughter, Karen, and a son, Franklin.

You may recall that last month I mentioned that **Jack Finger** was at Brown University. I wrote to Jack to find out a little bit more of what he was doing and I quote in part from his reply: "I have just joined the faculty of Education at Brown University after 10 years as a member of the education staff at Colgate University. Educators these days are described by a variety of titles. Norcotte Parkinson in a recent review of the 'Brain Watchers' described my field quite aptly as that of the educationalizer and quizzard. With Professor George Schleser at Colgate, I have been involved in a research project of predicting academic success among college students. We are continuing to test at the college level where some of the factors in underachievement have been pretty clearly delineated. Currently we are preparing to test at the junior and senior high school level to determine at what age the factors which predict success at the college level can be identified." . . . Recently I had occasion to visit **Max Kaplan** in Los Angeles. Max worked for North American from 1946 to 1953 and for Hughes Aircraft from 1953 to 1960. He was chief metallurgist of the Propulsion Department at Hughes. During this time he went to night school for a couple of years to learn about the investment counseling business. In 1960 he decided to go into this business for himself and since then has been successfully advising an increasing list of clients as to how best to invest their funds. Five years ago he was married. In March he and his wife left for three months on an extended trip in the South Pacific where they visited Australia, New Zealand and some of the more exotic ports of call. Max very kindly explained some of the techniques that he used to predict which securities to buy and which to sell. The charts he uses are full of cabalistic inscriptions and are most impressive. Perhaps Max is the modern incarnation of the alchemist of the Middle Ages whose goal was to turn base metals into gold.

I saw **Bill McGuigan** in Palo Alto. Bill is assistant general manager, engineering at Stanford Research Institute. I couldn't possibly do justice to S.R.I. in these notes; its program is much too extensive. Bill's own work is also varied. As I understand it, he is basically concerned with how to improve the effectiveness of the engineer, especially with regard to the information the engineer needs. Bill must constantly ask himself such things as: Just what is technical information? What is really worthwhile? What information does a scientist and engineer really want and need? How can the enormous amount of data available today be organized and properly identified? How can this data be put into a form that is quickly recognizable by men working in various disciplines? What form should the output take? Then, there are many related problems such as communications, electromagnetic wave propagation, etc. Bill feels that S.R.I. is responsible for more than 2 per cent of the nation's research effort (I suspect the same yardstick would show that M.I.T. is responsible for at least three times this). It is interesting to note that no single contract

exceeds 5 per cent of S.R.I.'s total program, but 75 per cent of their program involves the Department of Defense. Although I did not have time to meet them, there are a number of other classmates at S.R.I. **Carl Trexel** is a senior industrial economist there and is currently studying the international demand for fuels. **Bill Lynch** is a senior research engineer and is working in the Radio Systems Laboratory. It was good to see Bill McGuigan again and hear some of his original and stimulating ideas, which I hope he will find time to publish.

Now for some miscellaneous notes: **George Schwartz**, who as many of you know is president of Compo Shoe Machinery Corporation, has been elected to the board of directors of the Laboratory for Electronics. . . . **Bob Jacobson** and his wife had a little girl last fall; she has two sisters. . . . **Michael Bever** was one of the authors of a paper presented at the fall meeting of the Metallurgical Society. . . . How about starting off the New Year by writing to me? Your classmates are interested in knowing what you are doing.—**Jack Sheetz**, Secretary, Room 3-344, M.I.T., Cambridge 39, Mass.

'44

As I have been promising for some time, I finally have some news on the joining of 2-'44 and 10-'44. At the M.I.T. Faculty Club at the end of October a nominating committee got together to nominate class officers for a class election. The committee consisted of Bud Bryant, II; Jack Frailey, XVI; Bob Peck, XV; Bob Breck, XV; Scott Carpenter, X; and Mal Kispert, XVI. The committee was selected to include an equal number of representatives from 2-'44 and 10-'44. After some discussion, the committee held a unanimous vote to nominate and elect, on a temporary basis, pending confirmation at the next reunion, the following class officers: President, John Hull, XVI; Vice-President, Lang Flowers, XVI; Secretary, Paul M. Heilman, XV; Treasurer, Mal Kispert, XVI; Alumni Council representative, Bud Bryant, II; Reunion Chairman, Scott Carpenter, X. I am very happy about this development and I am sure that with the larger group it will be possible to plan for bigger and better reunions!

For 10 years the class notes did not report any information from **King Cayce**. Then a couple of months ago, I received a letter bringing us up to date on his activities as well as some of the other classmates. Last month I had the pleasure of receiving the following letter from King: "**Court Ames** was in town over the weekend and here is the current news from San Francisco: He and Dorry, and the four boys have moved into a new house in the town of Hillsboro, which is in the foothills of the coastal range south and adjacent to San Mateo. He indicated that while they had technically moved, they were still very much in boxes and crates. It's an old house, about 40 years old, with lots of rooms. Now the two older

boys will have a science and hobby room and the younger boys will have a play room. Court is still doing consulting work with McKinsey and Company, and he has had experience in just about every conceivable kind of business. Court also told me that **Ken Scheid** was out on the West Coast on a speaking engagement and they had a chance to visit. Ken and Minette have two girls and live in Pittsburgh, where Ken is a professor of economics at Carnegie Tech, but his real job is to create and head up a Department of Graphic Arts. Ken had a fine background in this area; and, of course Carnegie Tech has a fine business and engineering school. Of course, we wish Ken well, and we also hope to hear from him once in a while when he is in the East. . . . **George and Clara Quisenberry** have two children and two Springer spaniels and George is getting along very well with a manufacturer's representative company selling packaging machinery. Court indicates that George is up and down the West Coast and is very pleased with his business connections. That's all of the news for now. Best wishes."

A couple of months ago I was out on the West Coast and called up **Stanley Felix, XV**. He is a CPA and has his own accounting firm. He is specializing in engineering accounting systems in application of computers, having taken graduate work at the University of California, Berkeley. After fighting the commuter traffic in from the peninsula, he has recently moved into San Francisco, where the Felix family, including three daughters, Judy, Margo and Stephanie, find they can enjoy San Francisco and its many activities. . . . A short note from **Roz and Sy Bessen, X**, from Los Angeles, indicates that their sons, Howard, Robert, and David, have a brother Steven Charles born September 11, 1962. Best wishes from your secretary, Steven. . . . The Institute clipping service brings to light the following class members: **Francis Newton LeBaron, X**, who went on to take his Ph.D. at Harvard, is now associate in biological chemistry at McLaren Hospital in Cambridge and living in Needham. . . . We have received a note that **Dr. Vernon W. Hughes, VI**, has been elected a new trustee of Associated Universities, Inc. in New York. Associated Universities, Inc. is a non-profit organization operating Brookhaven National Laboratories in Long Island under contract with the U.S. AEC. . . . **Robert D. Maher, X**, of Tulsa, Okla., has been appointed gas marketing superintendent in the gas sales section of the Producing Department of Pan American Petroleum Corporation.

Bay State Abrasive Products Company of Westboro, Mass., has just announced the appointment of **Gardner E. Alden, X**, as manager of Special Program Research. . . . The Grand Rapids Press reports that **Herb F. Knape, II**, has been promoted to the post of vice-president of Knape and Vogt. As Herb pointed out at the last reunion, Knape and Vogt are best known for fixtures for the home. Such items as closet and kitchen hangers are produced by the firm. In Herb's new position, he is responsible for the development of new product lines and im-

provement of existing products and the design and engineering of new machinery. I am sure Herb will be happy to hear from any class members who have ideas on new products.—**P. M. Heilman**, Secretary, 30 Ellery Lane, Westport, Conn.

'46

Two of our more scholarly classmates were involved in recent M.I.T. activities. **Dr. John A. Knauss**, now with the University of Rhode Island, chaired a seminar for the Department of Meteorology on the subject of "The Deep Circulation of the Pacific." . . . **Professor Lotfi Zadeh**, Visiting Professor of Electrical Engineering, spoke on "A Fresh Look at the Concept of State and Some of its Implications" at a Center for Communication Sciences colloquium. . . . **John E. Taylor** represented President Stratton and M.I.T. at inauguration ceremonies at Washington University, St. Louis, Mo., last October. . . . **Jack W. Reed** had a paper on "Atmospheric Focusing of Sonic Booms" published in the June, 1962, issue of the Journal of Applied Meteorology. Jack is with Sandia Laboratory, Albuquerque, N.M.

We occasionally have news to report of members of the 1946 graduate class. **U.S. Navy Captain Bennett C. Oelheim** has retired from the Navy after 25 years of service. He now makes his home at 805 West Knoll Drive, Los Angeles 69. He has joined the staff of Claremont Graduate School, teaching mathematics. . . . **Dr. Ju Chin Chu**, who received his Sc.D. in chemical engineering with the 1946 class, is now professor of chemical engineering at Polytechnic Institute of Brooklyn. Last month he addressed a joint meeting of the German Chemical Society and the German Institute of Chemical Engineers in Frankfurt, Germany. The topic of his speech was "Mass Transfer in Fluidized Reactors." On December 29, **Dr. Chu** was the keynote speaker at the International Symposium on Mass Transfer Operations at Banaras, a suburb of Calcutta, India. **Dr. Chu** is a member of 4 honorable and 11 professional societies, and has had more than 70 papers, patents, patent disclosures and books published. . . . We received an interesting newspaper clipping about **Pete G. Peterson**. Pete was in our class before moving on to Northwestern to complete his degree work. He is the president of Bell and Howell Company, and he has been in the news in recent years because of his beliefs in television programming and the consequent sponsorship by Bell and Howell of public service programs during prime evening time.

We are still waiting for the deluge of correspondence this column needs to stay well. The world is waiting to hear of your newest child, stock market coup, or promotion. I'll start the ball rolling by reporting my own promotion to assistant chief engineer, inertial components, Aeronautical Division of Minneapolis Honeywell. We are involved in the design

and production of high-grade inertial components, gyros and accelerometers, and we are also now involved in producing amazing new reference devices having no moving parts. It's a brave, rapidly changing world and it's fun to be a part of it.—**John A. Maynard**, Secretary, 25 Pheasant Lane, North Oaks, St. Paul 10, Minn.

'47

A major International Auto Show attraction at the Commonwealth Armory in Boston recently was the Swedish Saab sports car Quantum III, designed by two Greater Boston men, one of whom is **Walter P. Kern** of Cohasset. . . . **James E. Haggett**, Chief Project Engineer of the Norton Company, addressed the American Institute of Industrial Engineers at Worcester Polytechnic Institute. . . . **Vincent L. McKusick, VI-A**, an attorney in Portland, Maine, recently gave a public lecture at the University of Maine Law School recalling his experiences under Supreme Court Justice Felix Frankfurter and Judge Learned Hand. He is presently secretary of Bates Manufacturing Company and a trustee of the Maine Savings Bank. . . . **Paul F. Hellmuth, XV**, managing partner of Hale and Dorr, has been named a trustee of Cabot, Cabot & Forbes Company. . . . **Donald R. F. Harleman, I**, is a visiting associate professor of hydraulics at Caltech on leave from M.I.T. where he is an associate professor of hydrodynamics. . . . **Dr. William O. Lynch, I**, has become a partner of the firm of Stearns and Wheler. His previous experience included eight years as associate professor of sanitary engineering at Cornell University. . . . **Richard L. Mela, II**, has been named head of the Advanced Systems Department, Dynatech, Cambridge.

Arthur E. Buller has been named manager of Union Carbide Exploration, Ltd., in Canada. This newly formed subsidiary will be devoted to Canadian mineral exploration. . . . We received a letter from **Arnold Judson**, whose new address is 27 Redington Road, London N.W. 3, England. He is with the Emerson Consultants of New York City. Jud had previously been with Polaroid for a number of years. His phone number in London is Hamstead 2080. . . . **Dr. Robert H. Rediker** has been very busy at Lincoln Laboratory directing the efforts of a department responsible for the basic discovery of the efficient generation of infra-red emission by gallium arsenide at low temperatures. Many of the large companies are now actively pursuing research activities as an outgrowth of the basic work performed at Lincoln Laboratory.—**Martin M. Phillips**, Secretary, c/o Tyco, Inc., Hickory Drive, Waltham 54, Mass.

'48

A rather slim mail pouch this time, but enough to keep the class numerals in evidence in this section of The Review.

... **Walter R. Connell, Jr.** has been named B. F. Goodrich Chemical Company's product manager for rubber chemical sales. In his new position, he is responsible for all sales and market development activities for the firm's rubber chemicals. Mr. Connell has been with the company since 1948. His most recent position was senior product engineer, to which position he was promoted in 1957. He and his family live at 5030 Berkshire Drive, North Olmsted, Ohio. . . . **Dr. Philip A. Horrigan** has been appointed to the Southern Connecticut State College science faculty. Dr. Horrigan has been active in education and industry as a chemist and executive. He was assistant professor at New Haven College from 1960 to this year, president of Jet Products from 1957 to 1960, and a research chemist earlier in private industry. Besides a B.S. in chemistry from Tech, he received the M.S. from Boston College and the Ph.D. from the University of Illinois, both in chemistry. He was the co-author of the book, "Production of Acrylic Resins." . . . **Donald M. Graham**, Planning Administrator of the Boston Redevelopment Authority, spoke on the overall redevelopment plans in process for Boston at a meeting in October of the A.I.E.E. . . . **Dr. Jesse Friend Scott** (M.D., Vanderbilt, 1941) is an assistant professor of anatomy in the Harvard Medical School. He is associate biophysicist at the Massachusetts General Hospital. His residence is at 14 Country Corners, Wayland.

Lieutenant Colonel **Thomas K. Oliver** assumed command of the Holloman Air Force Base (N. M.) Guidance and Control Division two years ago when there were 41 personnel assigned to this division. Under his planning and direction, the division's growth has been explosive, increasing over 400 per cent. Assigned programs have risen from four to 22 during this period, and programs projected for future test have increased 600 per cent. Colonel Oliver studied under Dr. C. Stark Draper, '26, known as the "Father of Inertial Guidance," who considers the colonel one of his most outstanding students. Colonel Oliver was personally selected by General Schriever to serve on the BOX committee, a select group of experts set up to conduct a special survey of stellar-inertial guidance systems and their applicability to future Air Force programs. The work of Colonel Oliver's division played an appreciable part in the success of the first Minuteman launch at Cape Canaveral. I quote the following interesting paragraphs without abridgment from the Air Force release: "Lieutenant Colonel Oliver graduated from the U.S. Military Academy in June, 1943. After pilot training, he was assigned to the 15th Air Force in Italy flying B-24's. On his 25th and last mission he was shot down on a raid to the Ploesti Oil Fields. He and his crew evaded capture for 96 days. Oliver, then a lieutenant, took the lead of flyers hiding out in the hills of Yugoslavia and contacted General Mihailovich, head of the Chetniks, the anti-communist party.

"On the Chetniks' radio they contacted their base in Italy. Teams of OSS

agents were flown in to arrange evacuation. The group consisted of approximately 250 allied crew members. They were airlifted out by C-47 aircraft on a strip measuring 600 yards in the hilly area of Yugoslavia. For his actions there Colonel Oliver received the Legion of Merit." Colonel Oliver is a command pilot with over 3,100 flying hours. He is married to the former Phyllis White and they are the parents of four children; Susan, 15, Donald, 12, Rex, 11, and Robert, 8.

The name of **Dr. Gordon H. Pettengill**, one of the directors of the Millstone Hill Field Station's Group 314, appeared in the October 'Safe Talk,' an Institute bulletin on safety. Group 314 has taken extraordinary measures to insure that the site of the station will not be lost to fire. Emergency pumps are connected to the site's deep water wells to provide water pressure until the Westford town fire department can answer the alarm and hook up its pumper truck to the pond across the road from the main building. Oil tanks used to cool the radar transmitters are protected by a piped carbon dioxide system with nozzles permanently installed in strategic locations. The high-voltage power supply is protected by automatic heat sensing elements, which, when a fire occurs, will activate a water fog spray. The maze of wiring under the computer room floor is also protected by a permanent carbon dioxide flooding system. Hand extinguishers are placed throughout the buildings, and recharging cylinders are available for pressurized water extinguishers. Trees and brush in this heavily wooded area are kept cut back from the buildings and equipment. Flammable liquids are stored in safety cans equipped with flame-arresting screens, vents, and self-closing covers.—**Richard H. Harris**, Secretary, 26 South Street, Grafton, Mass.; **Harry G. Jones**, Assistant Secretary, 94 Oregon Avenue, Bronxville, N.Y.; **Herbert S. Kinder**, Assistant Secretary, 128 Elatan Drive, Pittsburgh, Pa.; **Robert R. Mott**, Assistant Secretary, Box 113, Hebron, Maine.

'49

Luckily for me, there is little news this month. I am writing these notes at 2 A.M. in a hotel room in London and hoping that the mails will get them delivered before the deadline. I am busy getting a residence established here, looking forward to a one and one-half to two and one-half-year stay in England. If all goes smoothly, my family will be here before the first of March. I'm not sure how they will like our sojourn on foreign soil; however, I am sure that I will prefer it to commuting across the Atlantic. . . . **Demetre Ligor** has been elected director and senior sales engineer of Measurements, Inc., a new firm in Concord, Mass. He is a lecturer in electrical engineering at Northeastern University. Previous attachments include Lowell Associates, Inc., Burlington; Baldwin-Lima-Hamilton, Waltham; and Ruge de Forest, Cambridge. . . . From the

catalog of the Faculty of Medicine, Harvard Medical School, a picture of Assistant Professor of Bacteriology and Immunology **Arnold Frank Brodie**, who added a 1952 Ph.D. from the University of Pennsylvania to his 1949 M.I.T. degree. . . . **Robert L. Hend**, Director of the Meteorological Services Division of the Travelers Research Center, spoke in November at a Rotary Club meeting in Monson, Mass. He spoke on current developments in the atmospheric sciences and developed the need for a philosophy of atmospheric conservation. . . . **Dr. Italo S. Servi, S.M., ScD.** in physical metallurgy, has recently been appointed staff scientist at Ledgemont Laboratory of Kennecott Copper Corporation. Dr. Servi was born in Gallarte, Italy, and educated at the University of Milan. . . . **Harvey R. Tuck** of the Frigidaire Division of General Motors is co-inventor of a patent for a clothes dryer having an absorbent bed.

Dr. Frederick H. Buttner (M.S. and Ph.D. in physical metallurgy) has joined the staff of the Battelle Memorial Institute. The Battelle news release says "he will engage in studies to integrate research with corporate planning and management for the metals industry." Wow! His background includes nine years as manager of new products and engineering for Union Carbide in Niagara Falls. . . . That's all for this month. Godspeed to all from an out-of-country cousin.—**Frank T. Hulswit**, Secretary, 35 Acorn Park, Cambridge 40, Mass.

'50

I was pleased to go back to 1948 into the light green corridors of Building #1, vicariously, when **Al Bryson** dropped in to my office to relive those "glorious moments!" I had not had the opportunity to meet Al since 1951 and have been trying to track him down since that time. You can't imagine how pleased I was, when he attended one of our AMA meetings and unexpectedly dropped in on me. I certainly hope this will happen when any of you are in New York City. Al is in quality control at Atlantic Refining and Oil Company in Philadelphia, and would like to hear from his '50 friends. . . . **Sterling Brisbin** has joined Stearns and Wheler, Civil and Sanitary Engineers, Cazenovia, N. Y., as a partner, after several years of association as a sales and development engineer with Dorr-Oliver, Inc., as sanitary sales engineer and as sanitary development engineer. In his former capacity he provided technical engineering design information and operating instructions for over 50 projects, including multi-million dollar projects in New York City. In his latter capacity he was engaged in the development of new equipment and processes. . . . Five promotions among the executives of the Maryland Shipbuilding and Drydock Company were announced recently by the president, and **Walt Gerich** was elected as one of the vice-presidents. Walt, formerly director of engineering, will be responsible for the shipyard's engineering work and contract administra-

tion. Walt will be responsible for all aspects of the company's foreign and domestic sales programs too.

Again this year, our special group of industrialists will meet at the 15th annual Fiesta in Mexico—March 7-9, in Mexico City; club officers are **Marty Cornish**, Treasurer and **Dick Bolin**, 1963 Fiesta Counselor. . . . **Dave Kret** has just completed a successful re-election campaign and will serve his second term in the Arizona legislature starting January 14. Last May he opened his own consulting office. Dave is married, and celebrated his ninth anniversary in June, 1962. Dave and Mrs. Kret are parents of what they call a "boy sandwich" that is a girl on top and bottom (8 & 2½) and two boys in the middle (7 & 5). Dave's address is 2420 North 73rd Street, Scottsdale, Ariz.

Again, this month I have the following address changes for you: **Wilburt E. Haggerty**, 4405 33rd Road, North, Arlington, Va.; **Dr. Thomas M. Hahn, Jr.**, Box 111, Blacksburg, Va.; **Captain Marlin Hydinger**, DEFREPNAMA/USRO, APO 230, New York, N.Y.; **Ross S. Karlson**, 916 Stony Hill Road, Wilbraham, Mass.; **Dr. Paul Kruger**, Stanford University, School of Engineering, Nuclear Chemistry Department, Stanford, Calif.; **Dr. Howland A. Larsen**, 211 Oakwood Road, Wilmington 3, Del.; **John F. McCarthy, Jr.**, 4252 Via Pinzon, Palos Verde Estates, Calif.; **Robert Meisel**, 34 Leslie Road, Winchester, Mass.; **Paul L. Mitchell, Jr.**, 2867 Observatory, Cincinnati 8, Ohio; **Donald R. Newhouse**, The Oregonian, 1320 SW Broadway, Portland 1, Ore.; **Kenneth H. Olsen**, Weston Road, Lincoln, Mass.; **Edward L. Perkins, 2d**, Stanford Research Institute, 820 Mission Street, South Pasadena, Calif.; **Clarence F. Picard**, 1686 Dearborn, St. Louis 22, Mo.; **Samuel O. Raymond**, Old Main Road, North Falmouth, Mass.; **Captain Robert W. Roig**, 15 Clay Spring Road, Cohasset, Mass.; **Nathaniel Roossin**, 55 Mary Ellen Road, Waban 68, Mass.; **Salomon Salomon**, 301 Forest Street, Madison 5, Wis.; **Arthur L. Weitzmann**, P.O. Box 815, Mountain View, Calif.; **Paul B. West**, 225 East 73rd Street, New York 21, N.Y.; **Robert B. Wolf**, Apartment 530, 145 Pinckney Street, Boston 14, Mass.; **Augustus F. Andrews**, 5488 Pecan Grove Lane, Memphis 17, Tenn.; **Mrs. Mary W. Barnes**, 213 East Mitchell Avenue, State College, Pa.; **James J. Bennett**, 1112 Longmeadow Lane, Western Springs, Ill.; **Howard P. Bill**, 55 Barrett Drive, Niantic, Conn.; **Sterling G. Brisbin**, 53 Sullivan Street, Cazenovia, N.Y.; **James H. Callison, Jr.**, 2786 South Newton Way, Denver 19, Colo.; **Dr. Kun Li Chien**, 2558 Euclid Heights Boulevard, Cleveland Heights 6, Ohio; **Leon Christianson**, 2508 Round Top Road, N. W., Roanoke, Va.; **William Corcoran, Jr.**, 645 Underwood Street, Holliston, Mass.; **Paul L. Cumings, Jr.**, 9 Edgewood Terrace, Milburn, N.J.; **Harold W. Curtis**, 106 Prospect Street, Stoughton, Mass.; **Dr. Herbert C. DeStaebler, Jr.**, Stamford Linear Accelerator Center, Stamford, Conn.; **William H. Enders**, 157 Grover Avenue, Princeton, N.J.; **Dr. Herman C. Fischer**, RR #1, Box 284, Neshanie Station, N.J.; **Melvin J. Gard-**

ner, 10 Woods Way, Larchmont, N.Y.; **Robert F. Gordon**, 911 Parkside Terrace, Fairfax, Va.; **David E. Gushee**, 245 Hillside Circle SW, Vienna, Va. It is my fervent wish that these few lines find you in the best health, and wish you all the best for this 1963.—**Gabriel N. Stilian**, Secretary, American Management Association, 1515 Broadway, New York, N.Y.

52

It's getting on in the year, and here we are again. A bit of news in the mailbox would be welcome about this time so please drop a line. It's your column, too. . . . Harvard University announces the appointment of **Stanley I. Buchin** as assistant professor of business administration at the Business School, where Stan is also an IBM fellow at the Harvard Computing Center. . . . **Charles Beaudette** has recently been appointed to the position of vice-president of marketing at the Electronics Corporation in Maynard, Mass., where he was previously product manager. . . . **John P. Lynch, Jr.**, presented a paper on "Zirconium Copper Rod and Wire" at the annual convention of the Wire Association in Baltimore in October. John is a project metallurgist with Anaconda American Brass Company in Ansonia, Conn., and has co-authored an article, "Copper-Alloy Extrusions" in the September, 1962 "Machine Design." On the M.I.T. scene, John is past president of the New Haven Club and is a member of the Educational Council. . . . In September, **Jacqueline Bean Allen** and **Nicholas Melissas** were married in Newton and are residing in Newton. Nick is now assistant general manager of J. L. Thompson. . . . **Art Freeman** is now with the National Magnet Lab at M.I.T. as a senior scientist working in solid state physics. . . . **Maurice Davidson** has been appointed a professor of electrical engineering at Fairleigh Dickinson University, in New Jersey. . . . **Bob Doane** is with the Air Force's Electronic System's Division and chaired a workshop on ESD organization, relationships, and functions.

Douglas S. Smith is in Mount Vernon, N.Y., as assistant director of research, Vick Chemical Company, Division of Richardson-Merrell. . . . **Carleton B. Scott** is with Collier Carbon and Chemical Corporation as assistant to the vice-president of R & D, doing research planning and corporate growth planning, and living in Los Alamitos, Calif. . . . **James Stolley** has moved to Hamilton, Ohio, and is assistant general superintendent of Beckett Paper Company for supervision, production and maintenance. . . . **Elwin Messer** is chief engineer at Todd Shipyards Corporation, Seattle Division, Seattle, Wash. . . . **Charles A. Honigsberg** is living in Jackson Heights, N.Y., and is a design engineer with M. W. Kellogg Company, working on petroleum refinery and chemical plant equipment. . . . **Eugene P. Schacht** is the whole safety department

at California Chemical Company in El Cerrito, Calif. . . . **Don West** is with Boeing as an aerodynamics engineer, group leader for hydrodynamics research and preliminary design in the advanced marine systems organization or in plain English "Applied Research for Hydrofoil Ships," in Seattle. Don mentions that **Ted Uhler** is organizing a construction company, Uhler-Stauffer, Inc., in Palo Alto, Calif. . . . **John Fitch** is now a staff assistant doing technical writing and sales promotion with Condorc Control, Inc., Concord, Mass., and continuing free lance announcing with WHDH. . . . **Bob Lurie** is a senior chemical engineer with Ionics, working on the development of fuel cells and giving papers on same. . . . **Martin Fink** is with United Aircraft Research Labs in West Hartford, Conn., as supervisor of the Missile Aerodynamics Group working in Aerophysics; Martin has given several papers on flow and ballistic re-entry problems. . . . **Al Hofstatter** is with Ryan Aeronautical Company as chief metallurgist in San Diego, Calif., where he heads up the metallurgical lab and is in charge of all research and production processes in the field. Al expects to receive his M.S. in industrial management this month. . . . **Rodney Frost** is with Corning Glass Works as a senior mechanical engineer doing process development in the field of Fused-Cast Refractories in Corning, N.Y.

Henry G. Hohorst is materials handling supervisor at Monsanto Chemical in Trenton Mich. . . . **Arnold R. Erickson** is with Consolidation Coal Company, R & D. Division, in Library, Pa., as a chemical engineer working with pilot plants. . . . **C. M. Chang** is in Palo Alto, Calif., with Texas Instrument, Inc., as manager of germanium transistor development. . . . **John B. Mattson, Jr.** is in Albuquerque, N.M., with ACF Industries as assistant division comptroller and has received his M.S. in nuclear engineering and his M.B.A. in business administration from Harvard. . . . **Alfred J. Kargl** is in Hartford, Conn., where he is senior project engineer with Emhart Manufacturing Company, food processing machinery development. . . . **Victor Horlick** is doing sub-contract engineering with Sperry Gyroscope Company in Glen Oaks, L.I., N.Y. . . . **Paul Ries** writes from Canada that he is leaving for England to be working for Thomas Hedley, a P. & G. subsidiary, doing market research. Paul has been with Procter and Gamble of Canada, Ltd., as market research brand manager. . . . **Howard B. Zasloff** is with the Lummus Company as an engineering specialist in chemical plants and refineries and is living in Brooklyn, N.Y. . . . **Robert N. Summer-ville** is with Avison as chief process engineer in Chester, Pa. . . . **Leonard Horwitz** is in Carmichael, Calif., as assistant engineer, supervisor of a group responsible for design of ordnance devices for Minuteman missiles with Aerojet General. . . . **J. Edward Schwartz** is a broker with Merrill Lynch, in Detroit, and living in Birmingham, Mich. . . . **John P. Young** is in Huntsville, Ala., with the Army Rocket and Guided Missile Agency, Redstone Arsenal, as an aeronautical re-

search engineer assisting in the analysis of various weapons systems. . . . **Bob Schwanhauser** is with Ryan Aeronautical Company in La Mesa, Calif., as program manager. . . . And finally, **Michael Green** is secretary and treasurer of H. Green and Company, Inc. in New York, trading in copper and zinc.—**Dana M. Ferguson**, Secretary, 242 Great Road, Acton, Mass.

'53

We received a note from **Mark Schupack** who reports that I improperly promoted him (from assistant professor to associate); what's the difference? Seems like the best way to correct the inaccuracy is for Brown University to promote you, Mark? . . . The Harvard Faculty is still upgrading itself; two M.I.T. classmates are on the Harvard Medical School faculty. **Anthony Bartholomay** is an assistant professor of mathematical biology, and **Standish Hartman** is an associate in biological chemistry. . . . **Arthur Mullen-dore** was a co-author of a paper on "Creep and Grain Boundary Sliding in an Aluminum-3 Per Cent Copper Alloy," at the fall meeting of the Metallurgical Society. . . . Three of our noble classmates have given recent seminars at the Institute; **Joseph Kohn** (now a professor at Brandeis University) gave one on "Potential Theory in Several Complex Variables." . . . **Stanislaw Olbert** (professor at M.I.T.) delivered one entitled, "Interaction of the Solar Wind with the Magnetosphere" . . . and **Ali Argon** (professor at M.I.T.) orated on "Crack Formation in Plastic Deformation." . . . **William Farrington** published a scholarly article, "Financing New Ventures," in the September issue of *International Science and Technology*. The writeup about Bill was interesting, and is included verbatim: "A comparative rarity in financial circles, William B. Farrington is a scientist turned banker. He is an officer of the Electronics Division of the Empire Trust Company. Earlier he spent five years as a senior investment analyst for United Funds, Inc., a mutual fund with assets well over a billion dollars. Since all of his previous time was devoted to engineering and science, he is able to view the problems of R and D from both sides of the fence. With a degree from Cornell and a Ph.D. from M.I.T., he taught at Massachusetts and Houston Universities and was a research geo-physicist with Humble Oil. Once he sat on the board of a company that made widgets (carrying devices for conveyor systems)."

Two other notes. . . . **Donald Hammerberg** has been admitted to the practice of architecture after successfully meeting the professional requirements of the State of Connecticut. Don, his wife and two children, are now living in Farmington, Conn., where he is a member of the architectural firm of Louis J. Drakos and Associates. . . . **Milton Muss** has been extremely active in community affairs in North Bergen, N. J., and recently was appointed chairman of the Boy Scouts Finance Drive. In his spare time, Milton

is acting building inspector for North Bergen and resident engineer of public works, and the father of two children. . . . Till next month, be of good cheer.—**Martin Wohl**, Secretary, 3724 Cumberland Street, N. W., Washington, 16, D.C.

'54

Apparently this is a year in which the members of the Class of '54 are content to go about making their ways in the world rather quietly. Last month, I had no news to report. This month, except for our annual run-down on people active in the Alumni Association, we nearly have a bare cupboard. Some of you surely are doing something out there; let us hear about it. . . . **James C. Emery**, who received his S.M. in industrial management with our class and who is now an assistant professor of industrial management at M.I.T., flew to India in December with Mrs. Emery. He will teach at the Indian Institute of Management in Calcutta for two months and return to the U.S. via Bagdad, Istanbul, Cairo and Athens. . . . Following is our third annual list of the members of the class who are active in one way or another in the Alumni Association. Most of the names are the same as those on the previous lists, but there are a few newcomers. And some names have new jobs attached. **Bob Anslow**, for example, not only is still president of the class and class representative on the Alumni Council, but is now also the treasurer of the Route 128 (Mass.) Club of M.I.T. . . . **Wally Boquist** is an associate of the Alumni Council. . . . **Chuck Masison** is our class vice-president. . . . **Dean Jacoby** is, as you probably all know, our class agent for the Alumni Fund, and is also a member of the Departmental Visiting Committee on Student Activity at Tech.

We have numerous people serving as officers of local M.I.T. clubs. **Mariano Aveledo** is secretary of the M.I.T. Club of Venezuela. . . . **Rich Wilson** is secretary of the M.I.T. Association of Cleveland, and **Mike Boylan** is secretary of the M.I.T. Club of South Texas (Houston). . . . **Malcolm Hepworth** and **Charlie Riley** are vice-presidents, of the Indiana Association of M.I.T. (Indianapolis) and the M.I.T. Club of Orlando (Florida), respectively. . . . **Jack Preschlack** is treasurer of the M.I.T. Club of New York. . . . **Alex Pausley** is secretary-treasurer of the M.I.T. Club of Central New York (Syracuse), and **D. J. Athan** is assistant secretary of the M.I.T. Club of Central Florida (Tampa). . . . Several classmates are Educational Counselors for the Institute, and spend their spare time maintaining good relationships with the high schools in their areas and interviewing prospective Tech students. These include **Harry Taylor** in Los Angeles, **Al Bachelder** in New Haven, Conn., **D. J. Athan** in Tampa, Fla., **Duane Yorke** in Massapequa Park, N.Y., **Bert Beals** in Oklahoma City, **Bill Rouzie** in Portland, Ore., **Mike Boylan** in Houston, and both **John Bradshaw** and **C. J. Carpenter** in Norfolk, Va. . . . That ends

our current list and our current supply of news. Drop a note around here to St. Louis, describing your latest doings, and I'll be glad to spread the word.—**Edwin G. Eigel, Jr.**, Secretary, 4945a Sutherland Avenue, St. Louis 9, Mo.

'56

The other day I attended an alumni club luncheon and was very pleased to see an overflow crowd of about 160 Tech men listen intently to a politician. No beseeching for scientific breakthroughs but only a request for us to contribute to honesty in our governments as normal citizens—a basic duty which we tend to ignore. . . . On November 2 Dr. **M. Philip Bryden** wed Dr. Patricia Rowe of Hamilton, Ontario. Both hold positions as research associates in the Department of Psychology at McGill University, Montreal. . . . After three and one-half years in the USAF at the Aeronautical Research Lab, Wright-Patterson AFB, **George Luthringer** is now enrolled at the Church Divinity School of the Pacific. In three years he will become an Episcopal minister and hopes to work in southern Ohio. . . . **Bob McKelvey** is working for General Electric in Philadelphia on re-entry systems. The McKelveys have three children. . . . My thanks to **John** and **Patricia Mansperger** for their annual Christmas letter. John is still with Warner and Swasey and works nights for his master's at Case Tech. They are quite active in church and civic work in Euclid. . . . **Bill Northfield** is manager, Product Performance, Special Products Manufacturing Department of Collins Radio in Cedar Rapids, Iowa. Bill is working on equipment for the manned satellites. . . . **Wendyl Reis** is back at Sprague Electric as assistant to the vice-president, Corporate Planning and Systems. Wendyl and Elaine have three children. . . . **Peter Witherell** is with the Mechanical Research Laboratory of E. I. duPont in Wilmington, Del. . . . By reading the Boston papers I find that **Bill Wolf** of the Wolf Research and Development Corporation in Concord, Mass., has acquired the computer, Whirlwind I, of Tech fame. The company analyzes data from the space probes and other celestial information. . . . **Ed Zoollan** is a production superintendent at Micro Tech in Pasadena.—**Bruce B. Bredehoft**, Secretary, 1094 Center Street, Newton Center 59, Mass.

'57

Thirty-one classmates plus their wives and dates gathered for a cocktail party in my apartment here in Cambridge in December. I obtained such a large amount of news that it will probably take a few months to report it all. . . . **Morton Rosenstein**, who came with his wife, the former Barbara Sparks (Brandeis, '58), reported he is now publicity director for Ionics, Inc., a Cambridge firm active internationally in the growing field

of fresh water manufacture. Morton received an M.B.A. from Boston University last June. The Rosensteins are now living in Needham; they have two children, a girl and a boy. . . . It was a pleasure to see **Joe and Mary Roan Rocchio**. Joe, after two years at Bell Labs, entered the Graduate School of Arts and Science at Harvard in 1960. He hopes to receive his doctorate in applied math in 1964. Mary spent two years at the I.T.T. Labs. At present she is working at Lincoln Lab and taking courses at Tech in Electrical Engineering. Prior to their marriage in 1960, Mary spent some time in Europe and Egypt. In 1961 they both travelled to South America. . . . **Virginia Hermann** drove up from Rockland, Mass. for the party. I wrote Virginia asking for some information on the work she has been doing in Turkey for the last three years. In reply, she wrote: "I taught for three years at the American Collegiate Institute in Izmir, Turkey. It's a girls' junior high school, and junior college-level school run by the United Church of Christ. In other words, it's a mission school, but it does offer a top-notch and wholly secular curriculum. I was teaching chemistry (my field at M.I.T.) and math. I was also directing the Social Service Club which sponsored, among many other activities, the village literacy program. I traveled quite extensively in Turkey, spending a few weeks in Istanbul, a summer working in the mission hospital at Gaziantep in the interior, several stopovers in Ankara on my way to other places, and, of course, I investigated many of the fabulous Hittite, Greek, Roman, Byzantine, and Ottoman ruins all over Turkey. I spent two weeks in Egypt, taking in the sights of Cairo and Luxor and speaking. Also I spent a summer at an Islamic conference in Jerusalem, Jordan. I had hopes of attending Harvard this year, studying for a master's in science education, but when I returned to the country in August, I found I couldn't afford it, so I went to work. Now I hope to study next year." . . . Although still deep in his medical studies, **Jim Rowan** was able to make it over with Carol, to whom he was married last June. Jim graduated from the Stanford University Medical School in 1961 and interned at the Mt. Sinai Hospital in New York City. Now he is at the Boston V. A. Hospital for one year of internal medicine. In June Jim starts a three-year residency in neurology at the Columbia Presbyterian Hospital in New York. . . . **Atis** and **Diana Liepins** were also among those present. Atis joined United Aircraft Research Labs after receiving his M.S. and C.E. in civil engineering in 1960. For the last year he has been with Dynatech here in Cambridge doing work on shock, vibration, and noise problems.—**Frederick L. Morefield**, Secretary, 17 Everett Street, Cambridge 38, Mass.

'58

Responsibility for this month's notes went to **Les Dirks**, and he reports accordingly: "Of the many people I once

knew at M.I.T., I've managed to keep track of only a few of the ones I knew best. While for some of these, the four-plus years since that Spring of 1958 have not been all sweetness and light, all seem well along the road to professional maturity and some measure of success. **Tito Poza**, after finishing his S.M. in electrical engineering, joined the staff of Purdue University, where he taught and worked towards a Ph.D. The lure of the space age, however, soon led him to take a position with the Space Technology Laboratories to do research on various aspects of the communications satellite problem. He has recently moved to the Hughes Aircraft Company near Los Angeles where he has been offered an opportunity to return to his real specialty, speech analysis. Tito is married, with a boy and a girl to his credit. . . . I last saw **Russ Walstedt** during the summer of 1960, when he appeared out of the blue at Oxford University. Russ went from M.I.T. to the University of California at Berkeley where he ended up doing experimental work in a very mysterious field of low temperature nuclear physics. His trip to Oxford was the result of an enviable financial arrangement with the Navy and due reverence for the pioneers in low temperature physics. In characteristic fashion, Russ completed his Ph.D. at Berkeley in three years, and followed that with a full year at Oxford under the sponsorship of the National Science Foundation. He is now, along with a wife and at least one child, back at Berkeley presumably holding down some incomparable job on the university staff.

"During a recent visit to Boston I had a telephone conversation with **Sandy Weinreb**, and discovered that he is about to complete his Ph.D. in electrical engineering at M.I.T. His main problem at that particular moment seemed to be deciding which astronomical salary offer to accept. Sandy has achieved some distinction in his search for intergalactic atomic hydrogen. His genius showed itself in the design of a sophisticated piece of electronic equipment which he used in conjunction with the big dish at the National Radio Astronomy Observatory in Green Bank, W.Va. This was all made possible by the generous support of the National Science Foundation. Sandy will finish at M.I.T. very shortly, but plans to remain in the Boston area. . . . **Mile Meeker** left M.I.T. for a year in Paris, and although I saw Mile in England and several times since, I've still no clear impression of just what activity occupied him during that year. Whatever it was, it apparently left him filled with resolve and great ambition as he returned to do graduate work in physics at our alma mater. He passed the Ph.D. qualifying exams with some distinctions, but then succumbed to the temptations of a well-paid post in industrial research. His field of endeavor has been thermionics.

"**Greg Hood** has devoted himself to the molding of young minds and since graduation has taught at private schools on both the East and West coasts. He is currently at Brooks School in North Andover, Mass., where he is teaching physics and mathematics. He is also back at

school himself, taking graduate courses in physics on a part-time basis. Most newsworthy of all, however, are his plans to forsake bachelorhood for the more settled life. If all goes as planned, the occasion will take place sometime next spring. . . . **Jack Christensen** took the ROTC route into the Air Force, and after pilot's training at a series of remote establishments in the Midwest, is now flying B-47's for SAC. He is currently stationed at Pease AFB in New Hampshire. He and Jean have a trio of young sons. . . . As for myself, after two delightful years in England, I returned for a year of teaching at Phillips Academy in Andover, Mass. Having proved to myself that the process of education is at least as esoteric and difficult a business as I had always suspected it to be, I am now in Washington experiencing the frustrations and satisfactions of working for the government. Here I'm concerned with certain aspects of our much advertised 'defense posture,' which for me is proving to be a most profound experience. From this perspective the extravagant things that one hears about the technological revolution of the past decade take on a fascinating and at times, frightening, reality. The frantic groping of the governmental apparatus attempting to come to terms with the technological complexities of defense and the Space Age is everywhere in evidence and not always encouraging. I still have Ph.D. aspirations, although as time goes on such plans tend to fade further into the indefinite future."

From the West **Toni Schuman** and **Low Cohen** report that "**George Bienkowski**, after a Ph.D. at M.I.T. is in Pasadena with wife and children where he is on the Department of Aeronautical Engineering staff at Caltech." . . . They also report that **Bill Cooper** was expecting his doctorate at the end of the summer and was planning to do postdoctoral work in physics in Germany. . . . **Ray Hybarger** got his master's from Berkeley last summer in chemical engineering and is now working for the U.S. Department of Agriculture in El Cerrito, Calif. . . . **Phil Banks** hopes to get his doctorate in geology at Caltech this year. . . . **Dick Anderson** expects his doctorate in physical chemistry from Rice this year. He has one child." . . . In the East **Bill Daly** made a move recently from Waverley, Mass., right into the middle of the landing pattern at Hanscom AFB in Lexington and reports that "**William A. Bayer** was married in April to the former Barbara Davison. She originally came from Torrington, Conn. They now reside in Hartford. Bill works as a civil engineer with a Manchester, Conn., construction company. Barbara teaches first grade at the Huckleberry High School in Avon, Conn. . . . **Bob Kley** received his master of science from the Moore School of Electrical Engineering at the University of Pennsylvania this past May. He and Sally (that's his wife) have returned to Boston where he is employed by RCA Burlington. . . . **E. John Irwin** was married to the former Margaret Evanson in September in California. They are residing in Ithaca, N.Y. (I think John has finished his Ph.D. and is now a professor

at Cornell but haven't heard from him lately so I'm not sure, but if not, he will be right away.) **Tom Bond** is also a professor at the university in Oregon." . . .

Sid Silber called the other night and is pleasantly settled in Park Ridge, N.J., with a house, wife, child and lawn.

It appears that one of our most active bachelors, aside from **Jim Benenson**, will tread the path to holy matrimony. Just received the official announcement of **Glenn Strehle's** engagement to Catherine C. Howe, a Wellesley senior. Glenn recently left the Institute's employ to become a financier with the Colonial Fund in Boston and is organizing the Eastern Reunion; he's a good salesman, so plan to come. . . . **Tom Lovejoy** ushered when **Charlie Diebold** married Sheila Aldrich, Smith, '62, in September. They live in Buffalo, Charlie's hometown, where he is both a banker and a vice-president. Tom is a broker-analyst for White Weld in New York City. . . . **Shmouel Winograd** was in print again in the October, 1962, IBM Journal, "Coding for Logical Operations." . . . **Ted Quist** and **Robert Rose** recently presented papers at society meetings. Ted is now at Lincoln Lab. He presented "Radiation Emitted by Gas Diodes" to the Boston Section of the IRE, and Robert gave "Tensile Behavior of Niobium Single Crystals" to the fall meeting of the Metallurgical Society in New York City. . . . **Andrew Sass** got his M.S. and Ph.D. from Purdue. After a brief stint at RCA, Princeton, he is now safely in the Army at Fort Belvoir. . . . **Chhut Chhoeur**, G, has been named Secretary of State for Industry in the new Cambodian Government Cabinet. He is the youngest member of this new cabinet. After taking his M.S. in civil engineering at Tech, he returned to Cambodia in the Ministry of Public Works. . . . **Don Gall** has rejoined Dynatech Corporation in Cambridge after an interim term with Thompson-Ramo-Woodridge.—

Cornelius Peterson, Secretary, 4 Rambling Brook Road., Upper Saddle River, N.J.; **Antonia Schuman**, Western Associate, 22400 Napa Street, Canoga Park, Calif.; **Kenneth J. Auer**, Midwestern Associate, 12955 Harlon Avenue, Lakewood, Ohio; **William G. Daly, Jr.**, 10 Angier Road, Lexington, Mass.

'59

Class members are still slow in sending news of their current jobs. I trust they will improve within the next few weeks. . . . Congratulations are in order to **Robert Hillman**. Bob passed the Massachusetts state bar exam. He will be joining the law firm of Fish, Richardson and Neves of Boston. . . . **Marv Manheim**, now with M.I.T.'s Civil Engineering Department, hasn't been spending all of his time in the sciences. Marv recently had an exhibition of paintings shown at the M.I.T. Faculty Club. . . . **John Chang** is now a systems design engineer for Foxboro Company. John, in fact, recently gave a talk at a meeting of the South-eastern Massachusetts Subsection Amer-

ican Institute of Electrical Engineers, in Bedford. . . . **Howard Markham**, recently released from the Army, has joined Research Analysis Corporation in Bethesda, Md. Howard will be working as an operations analyst. . . . **Cynthia Zanger** is now with Sperry Gyroscope in Great Neck, N. Y. . . . In Newton, Mass., **Fred Irons** is vice-president of Guillemain Networks, Inc.

Chuck Fitzgerald is now associated with M.I.T.'s Instrumentation Lab. . . . **Mike Garnier** is with IBM in San Jose, Calif. . . . I've received quite a few address changes recently but no indication of what everyone is doing. **Cal Swift** is now living in Newport News, Va.; **Wayne Stuart** in Rochester, N. Y.; **Bill Putt** is back in Boston; **Dave Kline** is in Providence, R.I. I hope everyone will write and inform me of these changes.—**Robert A. Muh**, Secretary, Arlington Towers M-424, Arlington Boulevard, Arlington 9, Va.

'61

From England comes word that our Rhodes scholar, **Dave Ness**, has won an Oxford University scholarship. Now the George Webb Medley Junior Scholar, he gained the award through a competition which involved the writing of three three-hour papers. Congratulations to Dave are certainly in order for this honor. No word yet on his return to the States; I'll pass that on as soon as I hear something definite. . . . The U.S. Air Force Home Town News Center tells me that Second Lieutenant **Herbert F. Schaake** is being reassigned to Keesler AFB, Miss., following his graduation from the technical training course for communications officers there. He entered the Air Force a year ago January. . . . And the Army passes on the word that Second Lieutenant **Vincent P. O'Neil, Jr.** arrived in Germany last October for duty with the 2nd Infantry Maintenance Battalion, after serving from June until that date in Aberdeen, Md. . . . Got a letter from **Jake Karrfalt** shortly before press time. He had at that point just returned from a honeymoon in Bermuda following a Columbus Day marriage to Esther Bradshaw of Clinton, N. C. They are now living in Hudson, N.H. He is still with Sanders. Driving round-trip from California to be present at the Boston wedding were **Earl Biven** (now with Douglas), who served as best man, and **Joe Arndt**, '60. Thanks for the line, Jake. Anyone else out there? —**Joseph Harrington, 3d**, Secretary, M.I.T. Graduate House 212-A, 305 Memorial Drive, Cambridge 39, Mass.

'62

Robert L. Covey is working at the Midwest Research Institute under a scholarship grant provided by the Kansas City Association of Trusts and Foundations. . . . **John L. Rosenfeld** is a first lieutenant at Fort Leavenworth, Kansas. . . . **Frank B. Sprow, X**, is working for

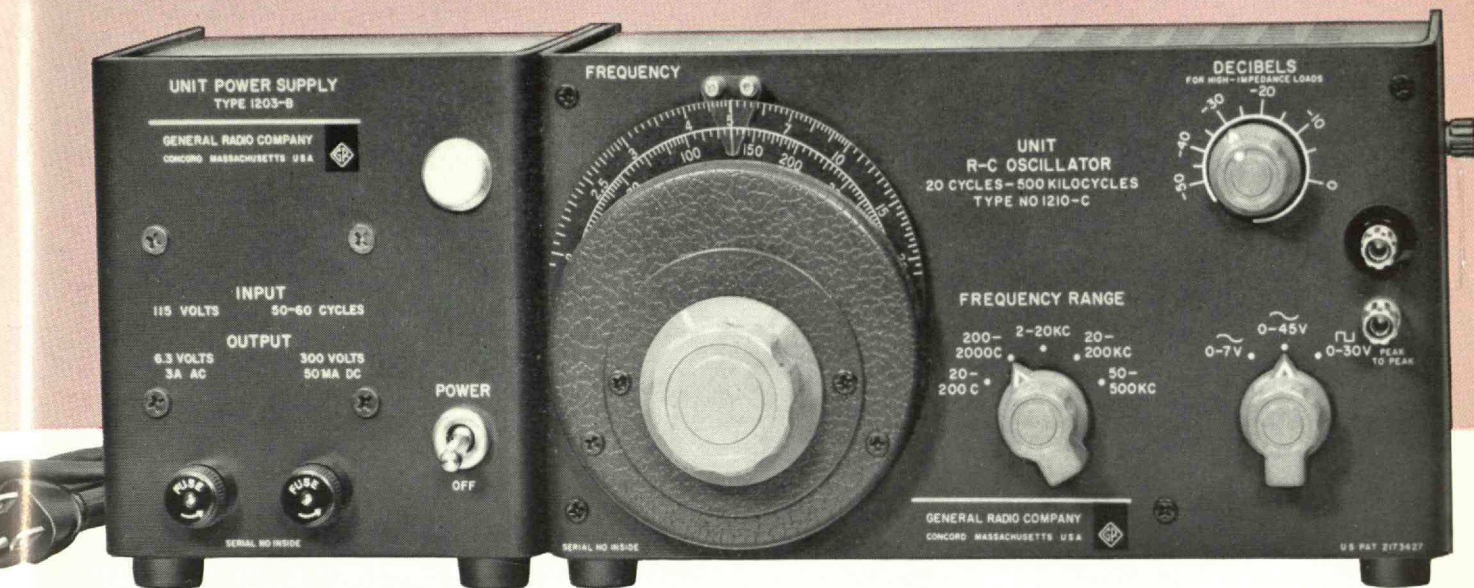
Humble Oil and Refining Company in Baytown, Texas. . . . **Bruce Prior, X**, is working in the Plastics Department of DuPont's Research and Development Division at Wilmington, Del. . . . **Kenneth Labaugh, VI**, is working for Sanders Associates in Nashua, N.H. . . . **Jeff Speiser, VI**, is studying at Cal at Berkeley under a Hughes Master Fellowship. . . . **Peng-chih Constance Yang, I**, has been appointed visiting assistant professor of civil engineering at the University of Illinois. . . . **William T. Mennitt** has been assigned to the Chemical Research Development Labs at Army Chemical Center, Md. . . . **Jane Shell** is an instructor of chemistry at Reed College in Portland, Ore. . . . **Frank Rubin**, a National Defense Fellow now at Brandeis, was married last September to Miriam Epstein, a junior at Brandeis. . . . **James D. Miller**, who is working for Esso Standard Oil of New Jersey, was married last September to Irene Jansen of New Bedford. . . . **Larry Stine**, now attending Stanford University, was married last October to Mary Crump.

Earl Ruiter, I, wrote me to announce the birth of a daughter, Debora Ruth. He also wrote that he was enjoying Northwestern's football games, but I think his letter was written during the more successful half of their season. Here at Stanford, we were privileged to watch No. 1 USC roll over our ball club. But it was still a ball attending real live gung-ho football games. . . . **Greg Gabbard, XXI-B**, is at the University of Texas on a fellowship. . . . **Doug Gaidry, XV**, is working for Space Technology Labs in Calif. . . . **Jean-Paul Garrie** is a second lieutenant in the French Air Force. . . . **William H. Geoghegan, XXI-B**, is at Stanford on a fellowship. . . . **Charles Glueck, XVIII**, and **John Gibbons, XVI**, are at M.I.T. . . . **Alfred Gilbert, VII**, is at the Albert Einstein College of Medicine. . . . **George Gilfoil, XV**, is working for Ingersoll-Rand. . . . **Gloria Goldberg, XVIII**, is on the Rand Corporation research staff. . . . **Robert Goldsmith, X**, **Leonard Goodman, VI**, and **Romulo Gonzalez, XV**, are at M.I.T. . . . **Philip Rabinovitz, X**, is working for Carborundum as a sales engineer. . . . **Kenneth Rahn, V**, is working at M.I.T. in geochemistry. . . . **Joe Rapaport, XV**, is in the Plastics Division of Allied Chemical Company.

Kenneth Rathjen, II, is working for Grumman Aircraft in Long Island, N.Y. . . . **Peter Reich, XVIII**, is at the University of Michigan graduate school. . . . **Raymond Rink, VI**, is working at the Sandia Corporation. . . . **Richard Robnett, XV**, is at M.I.T. . . . **Earle Roby** is working as an electronic engineer at the U.S. Naval Ordnance Test Station. . . . **Willard Rodgers, VII**, is in the Department of Psychology at the University of Pennsylvania. . . . **James Ross, VIII**, is at M.I.T. on an NSF. . . . **Philip Ruziska, X**, is at the M.I.T. Chemical Engineering Practice School. . . . **John Ryon, VIII**, is working for Babcock and Wilcox in Lynchburg, Va. . . . **David C. Ives, XVI**, is at M.I.T. on an NSF.—**Gerald L. Katell**, Secretary, 3771 Redwood Circle, Palo Alto, Calif.

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SINE WAVE, High-Impedance — for loads of 10,000 ohms and higher. Maximum open-circuit output is 45v. Output constant within ± 1 db from 200c to 150 kc; distortion less than 5% from 200c to 200 kc; hum down 60 db.

SQUARE WAVES — 0 to 30v peak-to-peak; rise time about $\frac{1}{3}$ μ sec; overshoot approximately 1%; hum down 60 db.

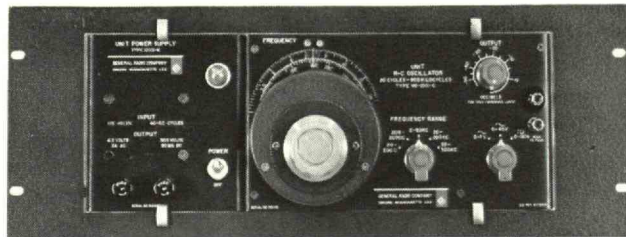
Other Features

- Very wide frequency range — 20 cps to 500 kc in 5 ranges.
- Calibrated output control (0-50 db).
- Fast-responding AVC system holds amplitude of oscillations constant.
- Sweeping of any frequency range using optional dial drive.
- Small, compact, lightweight and rugged.
- Low in cost — high in value.

Write for complete information



Type 1210-C can be converted to a sweep oscillator by adding a G-R Synchronous Dial Drive. **Type 908-P1 Drive** sweeps one frequency decade in 70 seconds. \$35.



Type 1210-C Unit R-C Oscillator and Type 1203-B Unit Power Supply shown relay-rack mounted using Type 480-P4U3 Relay Rack Panel (\$12.00).

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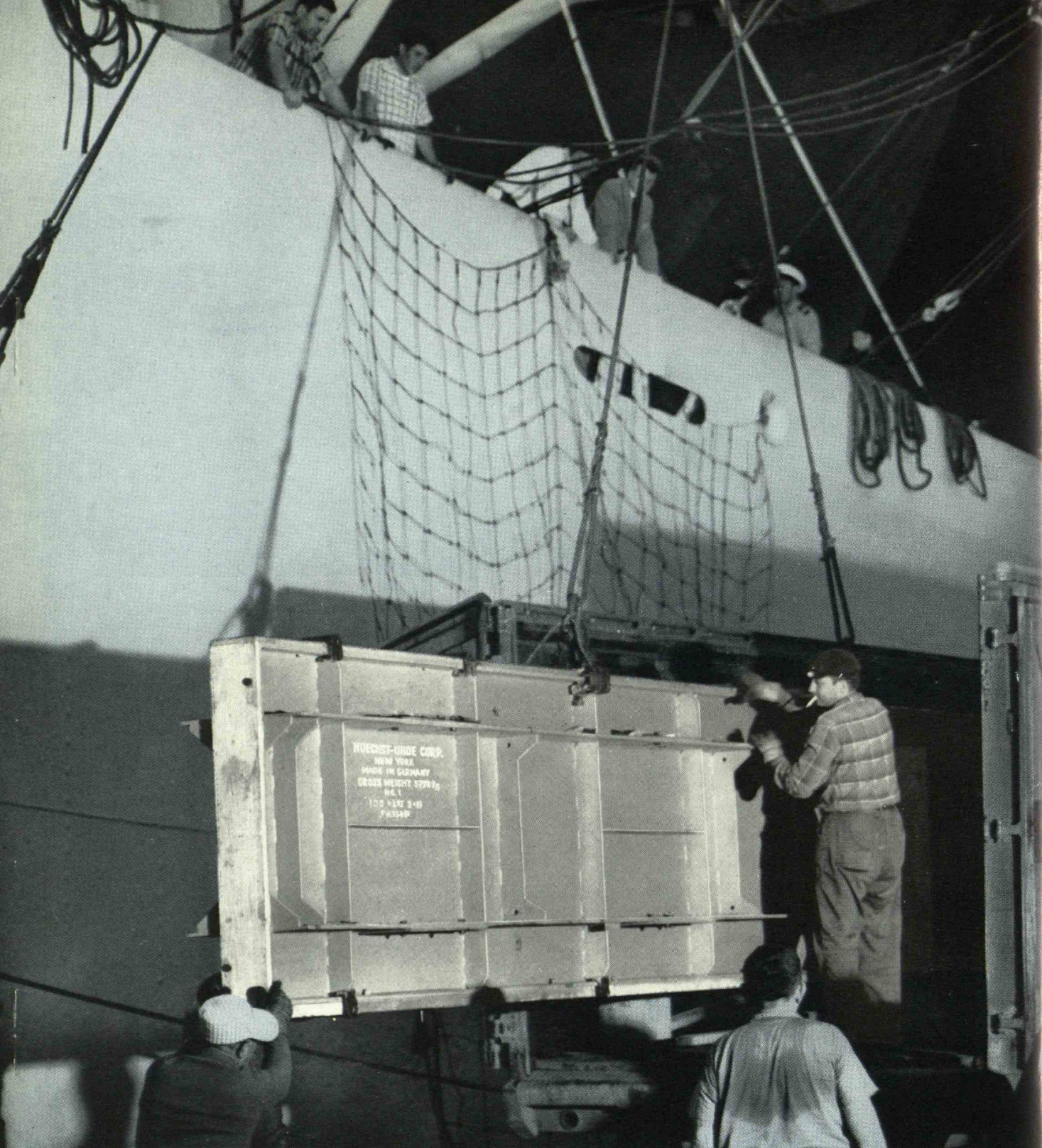
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